JVC

SERVICE MANUAL

STEREO CASSETTE DECK

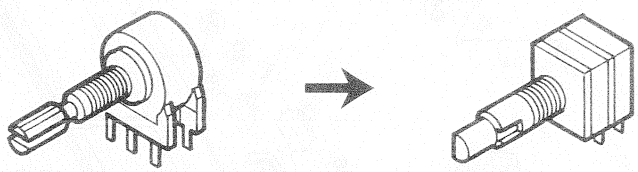
TD-X311BKX G

Since the model TD-X311BKX G is a secondary product of the model TD-X311 G, they are about the same in the specifications.
For servicing the TD-X311BKX G, refer to the service manual for the TD-X311 G, No. 4291.

Alteration in Main Parts

The type of the input volume control is changed as follows:

from : Single shaft, dual coils
to : Double shafts, dual coils



TD-X311 G → TD-X311BKX G

Contents

	Page
1 Exploded View of Enclosure Assembly	2
Enclosure Assembly Parts List	3
2 Standard Schematic Diagram	4
3 Location of P. C. Board Parts	6
4 Wiring	7

No. 4291B
June 1988

1 Exploded View of Enclosure Assembly

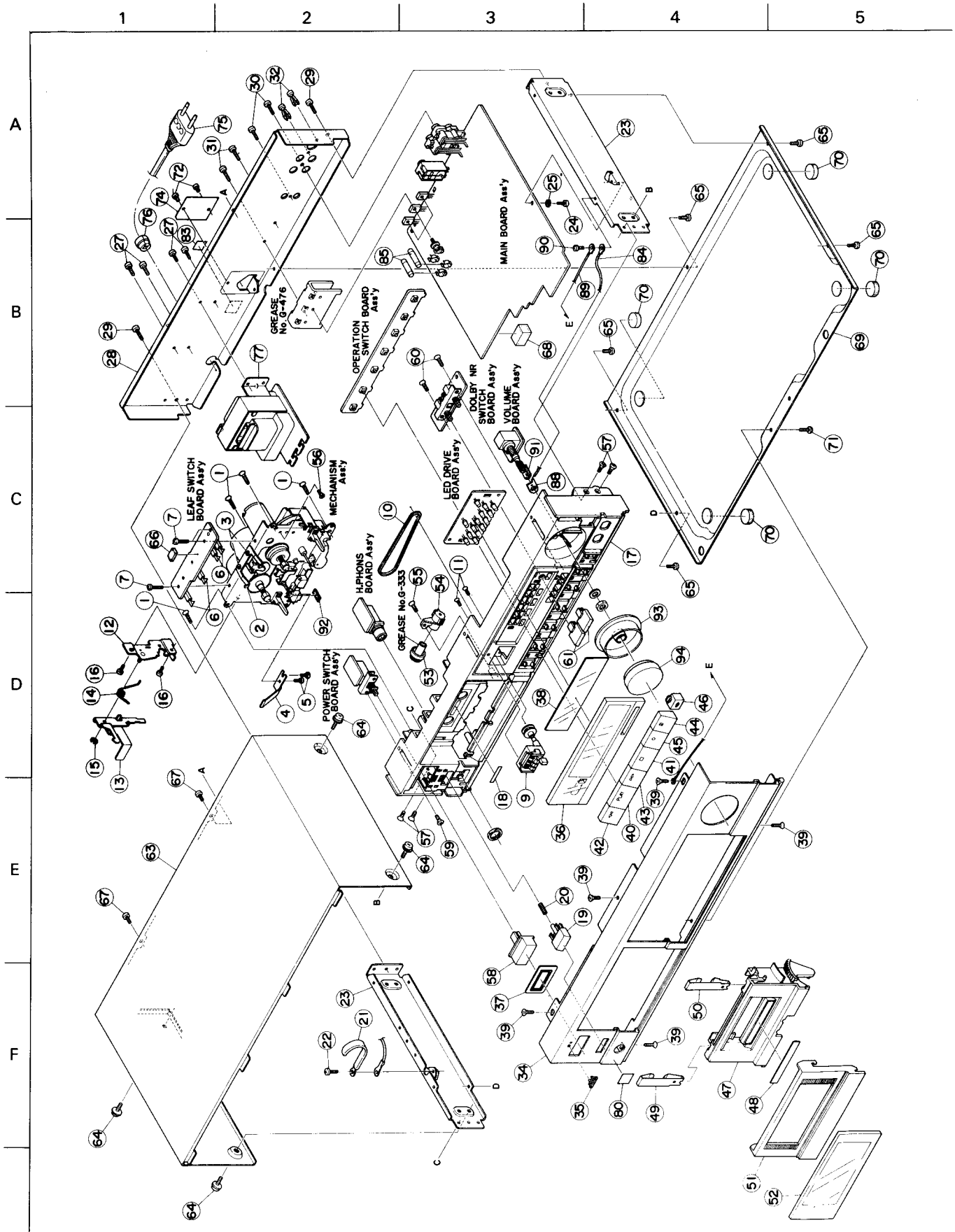


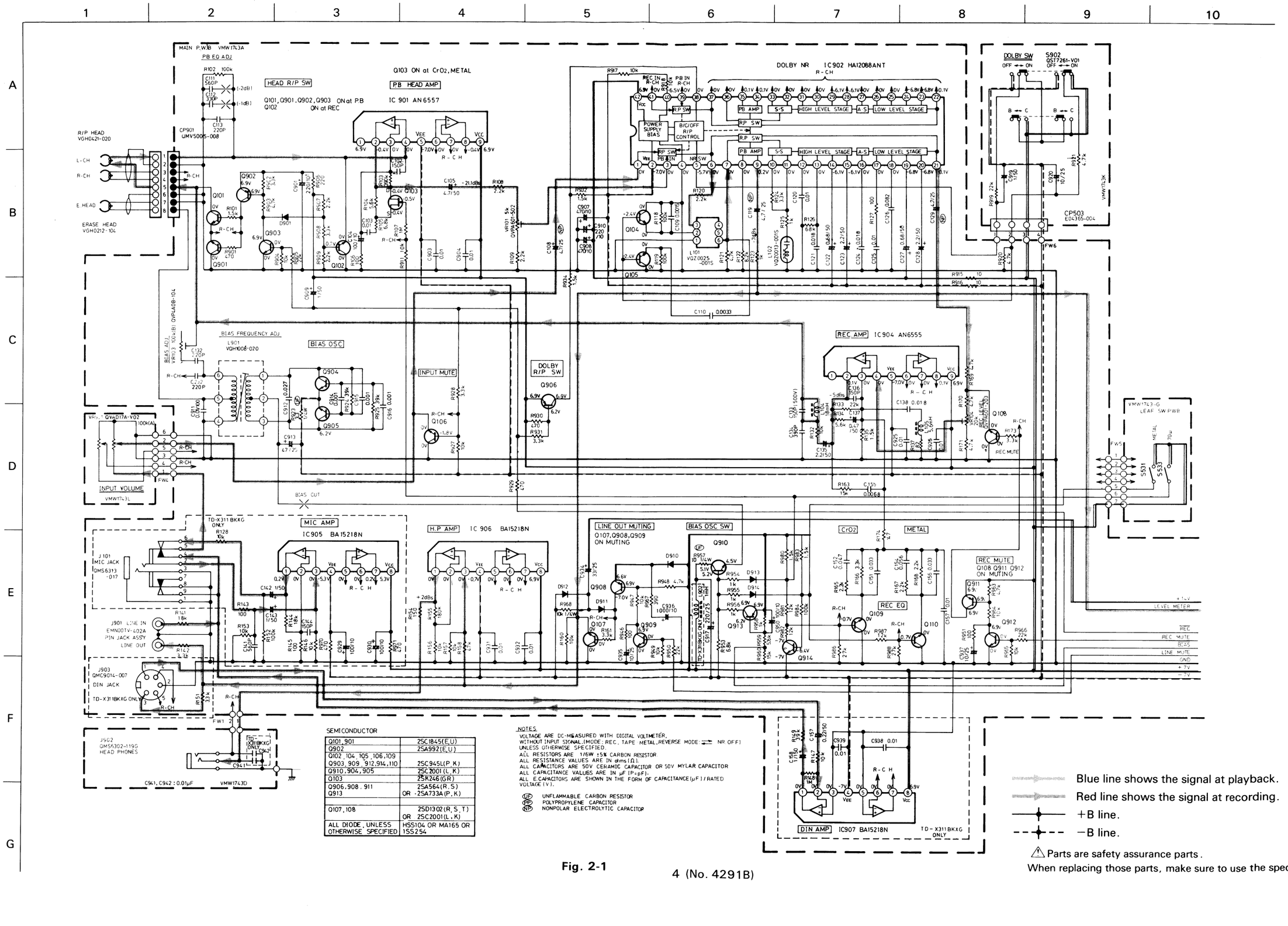
Fig. 1-1

Enclosure Assembly Parts List

⚠ Parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY
	1	SSSF3010Z	SCREW	MECHA+F.PANEL	4
	2	VKY4279-001	PACK SPRING		1
	3	SDST2604Z	SCREW		2
	4	VKY4497-001	HOLDER SPRING	MECHA	1
	5	SDST2603Z	SCREW	H.SPRING	2
	6	VSH1140-002	LEAF SWITCH	MECHA	4
	7	SDST2608Z	SCREW	LEAF SW PWB	3
	9	VKC5189-001T	TAPE COUNTER		1
	10	VKB3000-053	COUNTER BELT		1
	11	SSSF2606Z	SCREW	TAPE COUNTER	2
	12	VKL6066-00A	EJECT BKT ASS'Y		1
	13	VKM3124-001	EJECT LEVER		1
	14	VKW4643-001	TORSION SPRING		1
	15	REE2500	E.RING		1
	16	SDST2605Z	SCREW		2
	17	VJC1688-002	FRONT PANEL		1
	18	VJD4024-001	REFLECTION PLAT		1
	19	VXP4349-00A	PUSH BUTTON		1
	20	VKW3001-063	COMP.SPRING		1
	21	VKZ4001-011	WIRE HOLDER		1
	22	SDST3006Z	SCREW		2
	23	VKL3817-003	SIDE CHASSIS		2
	24	SDST3006Z	SCREW	P.W.B	1
	25	WBS3000N	WASHER		1
	26	SSST3008Z	SCREW	F.PANEL	1
	27	SDST3006M	SCREW	P.TRANS	4
	28	VJC2266-007	REAR PANEL		1
	29	SDST3006M	SCREW	R.PANEL+C.CHASSIS	2
	30	SDSF3008M	SCREW	P.JACK+DCS	2
	31	SDSF3008M	SCREW	HEAT SINK	2
	32	E48729-002	PLASTIC RIVET		2
	34	VJC1689-007	FRONT PLATE		1
	35	E72968-001	JVC MARK		1
	36	VJK3430-004	FINDER		1
	37	E73878-002	P.BUTTON ESCUTC		1
	38	VJD5119-002	LED PLATE		1
	39	SSSF3010Z	SCREW	F.PANEL+F.PLATE	5
	40	VXP3221-007	MECHA BUTTON	PLAY	1
	41	VXP3221-008	MECHA BUTTON	STOP	1
	42	VXP3221-009	MECHA BUTTON	REW	1
	43	VXP3221-010	MECHA BUTTON	FF	1
	44	VXP3221-011	MECHA BUTTON	PAUSE	1
	45	VXP3221-012	MECHA BUTTON	REC/REC MUTE	1
	46	VXP4686-001	PUSH BUTTON	DIRECTION	1
	47	VJT2177-001	CASSETTE HOLDER		1
	48	VJD5143-002	HOLDER PLATE		1
	49	VKY4382-007	CASSETTE SPRING		1
	50	VKY4382-008	CASSETTE SPRING		1
	51	VJT3242-002	CASSETTE LID		1
	52	VJT4149-001	CASSETTE FINDER		1
	53	VYH5033-002	DAMPER HOLDER		1
	54	VYH4769-002	GEAR		1
	55	SBSF3010Z	SCREW		1
	56	SSSF3010Z	SCREW		1
	57	SSST3006Z	SCREW		4
	58	E73877-001	PUSH BUTTON	POWER	1
	59	SSSP3008Z	SCREW		1
	60	SSSF3010Z	SCREW		2
	61	E71268-002	PUSH KNOB	INPUT	2
	63	VJC2101-008	TOP COVER		1
	64	VKZ3001-004	SPECIAL SCREW		4
	65	SDST3006Z	SCREW		5
	66	VYSR103-022	SPACER		1
	67	SDST3006M	SCREW		2
	68	VYSH115-004	SPACER	P.C.B.	1
	69	VJC1590-002	BOTTOM COVER		1
	70	VJF4003-002	FOOT		4
	71	SDSF3010Z	TAP.SCREW		1
	72	SDST3006M	SCREW		2
	74	VYN2235-008KK	NAME PLATE		1
⚠	75	QMP3900-200	POWER CORD		1
⚠	76	QHS3876-162	S.R.BUSHING		1
⚠	77	VTP54C3-061B	POWER TRANS		1
	80	VNC5004-001	MARK STICKER		1
	83	VND4037-002	F MARK		1
	84	VWE350-10A2NT	WIRE WITH LUG		1
⚠	85	QMF51A2-R80	FUSE	F1,F2	2
	88	VMA4383-001	EARTH PLATE		1
	89	VWE350-08NTNT	LUG WIRE		1
	90	SDST3006Z	SCREW		1
	91	VYSA1R2-008	SPACER		1
	92	VYSR103-028	SPACER		1
	93	VXL4325-001	KNOB (A)		1
	94	VXL4326-001	KNOB (B)		1

2 Standard Schematic Diagram



SEMICONDUCTOR

Q101, 901	2SC1845(E,U)
Q902	2SA992(E,U)
Q102, 104, 105, 106, 109 Q903, 909, 912, 914, 110	2SC945L(P,K)
Q910, 904, 905	2SC2001(L,K)
Q103	2SK246(GR)
Q906, 908, 911 Q913	2SA564(R,S) OR 2SA733A(P,K)
Q107, 108	2SD1302(R,S,T) OR 2SC2001(L,K)
ALL DIODE, UNLESS OTHERWISE SPECIFIED	HSS104 OR MA165 OR 1SS254

NOTES
VOLTAGE ARE DC-MEASURED WITH DIGITAL VOLTMETER,
WITHOUT INPUT SIGNAL. (MODE: REC., TAPE METAL, REVERSE MODE: ⟷ NR OFF)
UNLESS OTHERWISE SPECIFIED.
ALL RESISTORS ARE 1/6W ±5% CARBON RESISTOR.
ALL RESISTANCE VALUES ARE IN ohms (Ω).
ALL CAPACITORS ARE 50V CERAMIC CAPACITOR OR 50V MYLAR CAPACITOR
ALL CAPACITANCE VALUES ARE IN μF (P=pF).
ALL E.CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE(μF) / RATED VOLTAGE (V).

(UP) UNFLAMMABLE CARBON RESISTOR
(PP) POLYPROPYLENE CAPACITOR
(NP) NONPOLAR ELECTROLYTIC CAPACITOR

Blue line shows the signal at playback.
Red line shows the signal at recording.
+B line.
−B line.

⚠ Parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

Fig. 2-1

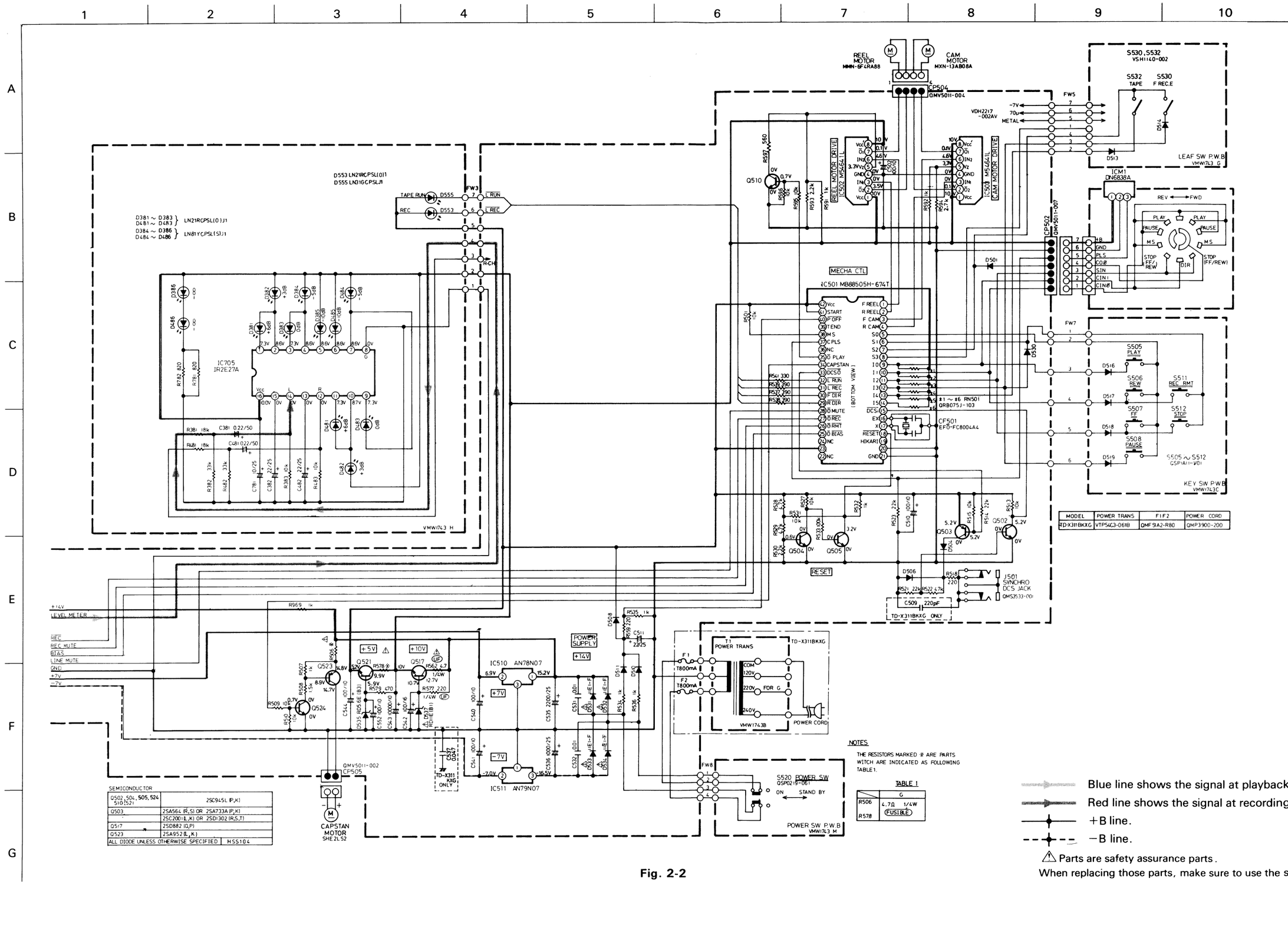
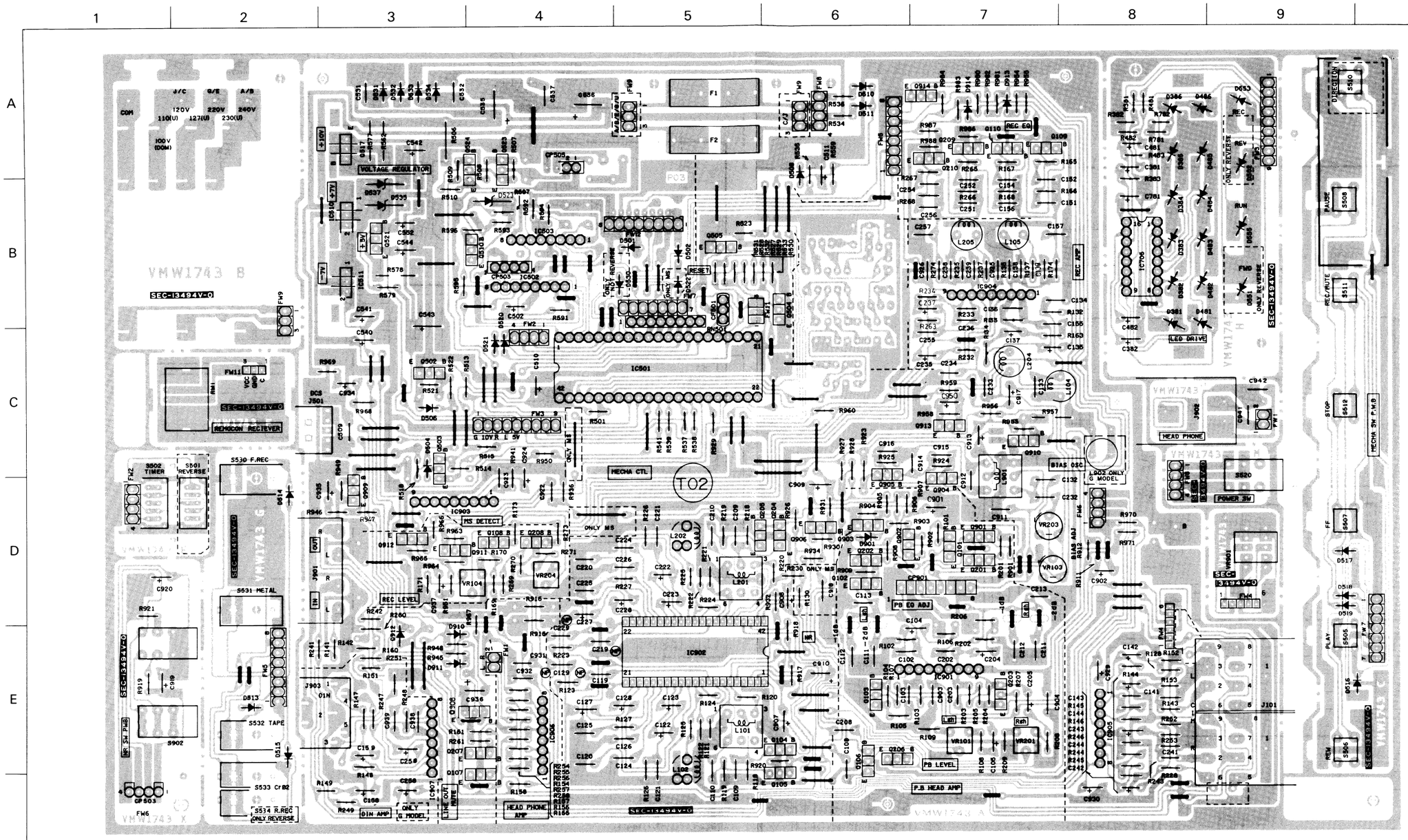
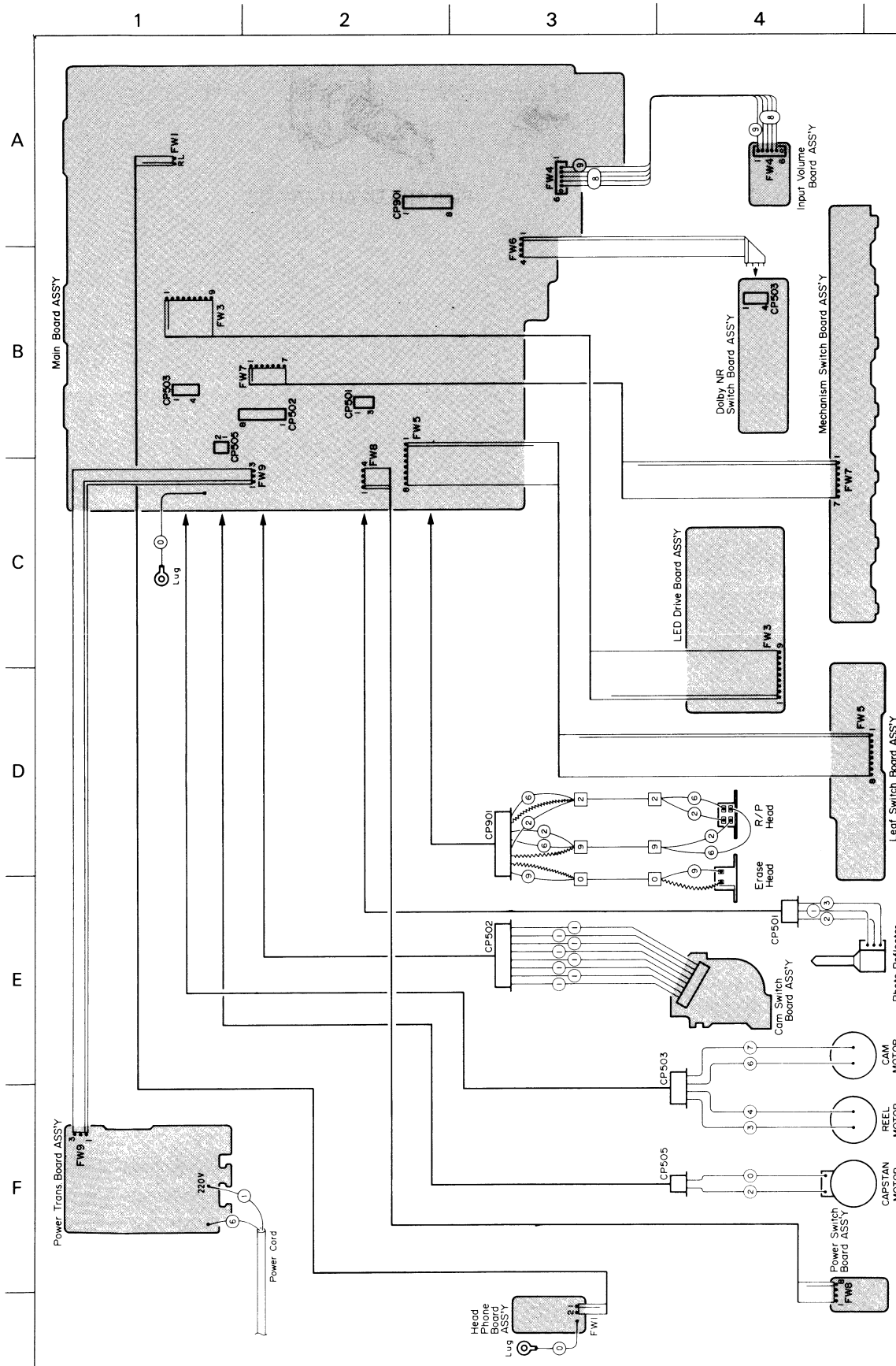

REEL MOTOR MMN-6F.RA88
CAM MOTOR MXN-13AB08A
CP504 QMV5011-004
S530, S532 VSH1140-002
S532 TAPE
S530 F REC.E
D514
D513
LEAF SW P.W.B VMW1743 G
FW5
VDH2217-002AV
-7V
70u METAL
Q510
R597 560
R596 10k
R595 10k
R593 2.2k
R591 1k
REEL MOTOR DRIVE IC502 M54564L
IC503 M54641L CAM MOTOR DRIVE
R592 1k
R594 2.2k
CP502 QMV5011-007
ICM1 DN6838A
REV FWD
PLAY
PAUSE
M.S
STOP (FF/REW)
D1R
D501
MECHA CTL
IC501 MB88505H-674T
(BOTTOM VIEW)
R501 10k
R541 330
R542 330
R543 330
R544 330
CF501 EFO-FC8004A4
RESET
HIKARI
DCS
R1 ~ R6 RN501 QRB075J-103
D530
FW7
S505 PLAY
S506 REW
S507 FF
S508 PAUSE
S511 REC RMT
S512 STOP
D516
D517
D518
D519
S505 ~ S512 GSP1A11-V01
KEY SW P.W.B VMW1743C
MODEL | POWER TRANS | F1 F2 | POWER CORD
TD-X311BKXG | VTP54C3-061B | QMF9A2-R80 | QMP3900-200
D553 LN21RCPSL(0)J1
D555 LN316CPSLJ1
TAPE RUN
REC
D555
D553
FW3
L RUN
L REC
R-CH
D381 ~ D383 } LN21RCPSL(0)J1
D481 ~ D483 }
D384 ~ D386 } LN81YCPSL(S)J1
D484 ~ D486 }
IC705 IR2E27A
R782 820
R781 820
R381 18k
C381 0.22/50
R481 18k
C481 0.22/50
R382 33k
R482 33k
C781 10/25
C782 22/25
R383 10k
C482 22/25
R483 10k
VMW1743 H
+14V
LEVEL METER
REC
REC MUTE
BIAS
LINE MUTE
GND
+7V
-7V
R969 1k
Q523
Q524
Q521
Q517
R578 *
R562 4.7 1/4W
R577 220 1/4W
+5V
+10V
IC510 AN78N07
IC511 AN79N07
POWER SUPPLY
+14V
+7V
-7V
C540 100/10
C541 100/10
C544 100/10
C535 2200/25
C536 2200/25
C543 10000/10
C542 100/16
C552 100/10
C551 2200/25
C509 220pF
TD-X311BKXG ONLY
D508
D507
D509
D510
D511
D512
R535 1k
R559 220
R534 1k
R536 1k
T1 POWER TRANS
TD-X311BKXG
F1 T800mA
F2 T800mA
COM
120V
220V
FOR G
240V
POWER CORD
VMW1743B
FW8
S520 POWER SW QSP0219-061
ON
STAND BY
POWER SW P.W.B VMW1743 M
J501 SYNCHRO DCS JACK QMS3533-001
D506
R518 220
R521 22k
R522 4.7k
Q503
Q502
Q504
Q505
R523 22k
R524 22k
R525 10k
R526 10k
R527 10k
R528 1k
R529 10k
R530 1k
R531 10k
R532 1k
R533 100k
C505 100/10
D504
QMV5011-002 CP505
CAPSTAN MOTOR SHE2LS2
SEMICONDUCTOR
Q502, 504, 505, 524, 510, 521 | 2SC945L (P,K)
Q503 | 2SA564 (R,S) OR 2SA733A (P,K) | 2SC2001 (L,K) OR 2SD1302 (R,S,T)
Q517 | 2SD882 (Q,P)
Q523 | 2SA952 (L,K)
ALL DIODE UNLESS OTHERWISE SPECIFIED | HSS104
NOTES
THE RESISTORS MARKED * ARE PARTS WITCH ARE INDICATED AS FOLLOWING TABLE1.
TABLE 1
R506 | G | 4.7Ω 1/4W (FUSIBLE)
R578
Blue line shows the signal at playback.
Red line shows the signal at recording.
+B line.
−B line.
⚠ Parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

Fig. 2-2

3 Location of P. C. Board Parts



4 Wiring



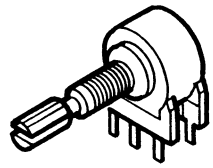
NOTE : Color of wires subject to change without notice.

Color codes are shown below.

1	.....	Brown
2	.....	Red
3	.....	Orange
4	.....	Yellow
5	.....	Green
6	.....	Blue
7	.....	Violet
8	.....	Gray
9	.....	White
0	.....	Black
D	.....	Pink
C	.....	Light Blue

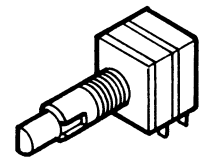
Fig. 4-1

VR901



Parts No. QVD7A7A-015V

VR901



Parts No. QVAD17A-V02

JVC

VICTOR COMPANY OF JAPAN, LIMITED.
AUDIO PRODUCTS DIVISION MAEBASHI PLANT 10-1, 1-chome, Ohwatari-cho, Maebashi-city 371, Japan

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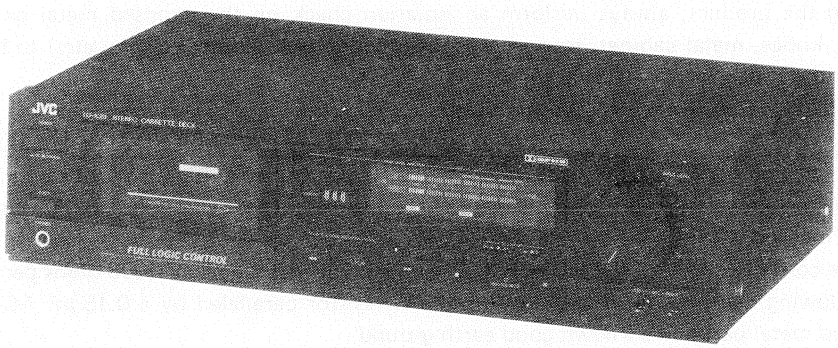
JVC

SERVICE MANUAL

STEREO CASSETTE DECK

TD-X311 A/B/C/E/G/J/U



Area suffix	
A	Australia
B	U.K.
C	Canada
E	Continental Europe
G	W. Germany
J	U.S.A.
U	Other Areas

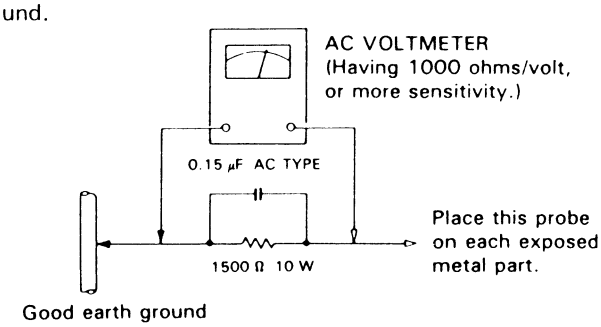
Contents

		Page
1	Safety Precautions	2
2	Features	3
3	Specifications	3
4	Name of Controls and Their Functions	4
5	Location of Main Parts	5
6	Removal of Main Parts	
	Enclosure Section	6
	Deck Section	7
7	Block Diagram	9
8	Main Adjustments	10
9	Standard Schematic Diagram	12
10	Wiring Connections	14
11	Location of P.C. Board Parts and Parts List	
	Main P.C. Board	15
12	Exploded View of Mechanism Assembly	18
13	Exploded View of Enclosure Assembly	20
14	Packing	23
15	Accessories	Back Cover

No. 4291
March 1988

1 Safety Precautions

1. The design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the product have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by (⚠) on the Schematic Diagram and Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the Parts List of Service Manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.
5. Leakage current check (Electrical shock hazard testing)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.
   Do not use a line isolation transformer during this check.
   - Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5 mA AC (r.m.s.).
   - Alternate check method
     Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500 Ω 10 W resistor paralleled by a 0.15 μF AC-type capacitor between an exposed metal part and a known good earth ground.
     Measure the AC voltage across the resistor with the AC voltmeter.
     Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).


AC VOLTMETER
(Having 1000 ohms/volt, or more sensitivity.)
0.15 μF AC TYPE
1500 Ω 10 W
Place this probe on each exposed metal part.
Good earth ground

Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

2 Features

1. **2-motor full logic mechanism**
2. **Dolby* B/C noise reduction system**
3. **2-color 6-LED peak level indicator**
4. **Auto tape selection mechanism**
5. **COMPU LINK-1/SYNCHRO terminal**

COMPU LINK
Control System

COMPU LINK control system is the convenient system using COMPU LINK-1/SYNCHRO terminals on the rear panel. (See pages 10 and 25.)

* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
* "Dolby" and the double-D symbol ⊡⊡ are trademarks of Dolby Laboratories Licensing Corporation.

3 Specifications

Type	: Stereo cassette deck
Track system	: 4-track, 2-channel
Tape speed	: 1-7/8 inch/sec (4.8 cm/sec)
Frequency response (−20 dB recording)	: Metal tape; 20−17,000 Hz 30−16,000 Hz (±3 dB) Chrome tape; 20−16,000 Hz 30−15,000 Hz (±3 dB) Normal tape; 20−16,000 Hz 30−15,000 Hz (±3 dB)
S/N ratio	: 58 dB (S = 1 kHz, K3 = 3%, N = A-weighted, Metal tape) The S/N is improved by about 15 dB at 500 Hz and by max. 20 dB at 1 kHz ~ 10 kHz with Dolby C NR on and improved by 5 dB at 1 kHz and by 10 dB at above 5 kHz with Dolby B NR on.
Improvement of MOL	: 4 dB at 10 kHz with Dolby C NR on.
Wow and flutter	: 0.08% (WRMS)
Channel separation	: 40 dB (1 kHz)
Crosstalk	: 60 dB (1 kHz)
Harmonic distortion	: K3; 0.5%, THD; 1.0% (Metal tape, 1 kHz 0 VU)
Heads	: METAPERM head for recording/playback x 1, 2-gap ferrite head for erasure x 1
Motors	: Electronic governed DC motor for capstan x 1 DC motor for reel x 1 DC motor for mechanism drive x 1
Fast forward/ Rewind time	: Approx. 100 sec. with C-60 cassette
Input terminals	
LINE IN (x 1 circuit)	: Min. input level; 80 mV Input impedance; 50 kΩ
MIC x 2 (TD-X311A/B/E/G/U)	: Max. sensitivity; 0.4 mV (−60 dBV) Matching impedance; 600 Ω − 10 kΩ
Output terminals	
LINE OUT (x 1 circuit)	: Output level; 300 mV Output impedance; 5 kΩ
PHONES x 1	: Output level; 0.3 mW/8 Ω Matching impedance; 8 Ω − 1 kΩ
DIN jack (TD-X311G)	: Min.input level;0.1mV/kΩ Input impedance;10kΩ Output level;300mV Output impedance;5kΩ
Other terminals	: COMPU LINK-1/SYNCHRO x 2
Power requirement	
TD-X311A/B	: AC 240 V, 50/60 Hz
TD-X311C/J	: AC 120 V, 60 Hz
TD-X311E/G	: AC220V,50/60Hz
TD-X311U	: AC 230/127/110 V, 50/60 Hz
Power consumption	: With power switch on; 14 W With power switch standby; 1.2 W
Dimensions (W x H x D)	: 435 x 112 x 290 mm (17-3/16" x 4-7/16" x 11-7/16")
Weight	: 3.8 kg (8.4 lbs)
Accessories	: Pin plug cord . . . . . 2 Remote cable 1

Design and specifications are subject to change without notice.

4 Name of Controls and Their Functions

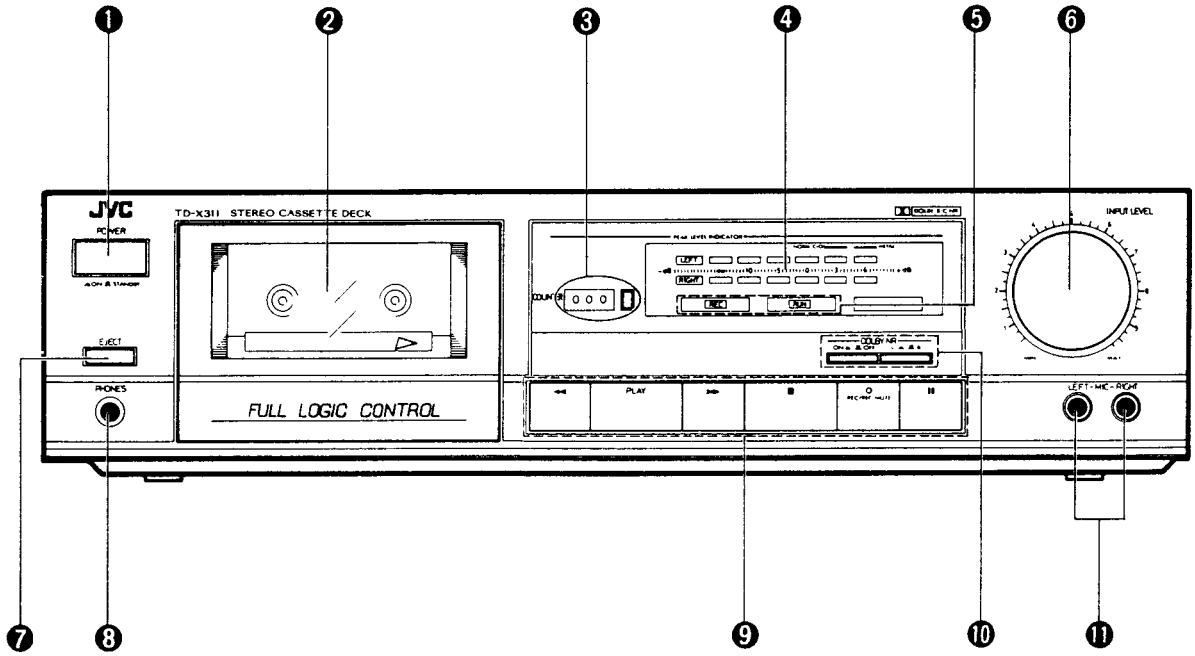


Fig. 4-1

❶ **POWER switch**

❷ **Cassette holder**

❸ **Tape COUNTER and reset button**

❹ **PEAK LEVEL indicators**
These indicate the recording level during recording and output level during playback. The LED indication varies with the signal strength during recording and playback.

❺ **Operation mode indicators**
REC: Lights in the recording and record-pause modes; flashes during record muting.
RUN: Flashes when the tape is running.

❻ **INPUT LEVEL control**
Adjust the recording level with this control.

❼ **EJECT button**
Press to open the cassette holder.

❽ **PHONES jack**
Connect headphones (with an impedance of 8 Ω to 1 kΩ).

❾ **Cassette operation buttons**
◀◀ **(rewind):** Press to rewind the tape.
PLAY: Press to start recording/playback.
▶▶ **(fast forward):** Press to fast forward the tape.
■ **(stop):** Press to stop the tape.
○ **REC/REC MUTE:** Press the PLAY button while pressing this button to start recording, and press to leave an appropriate non-recorded section. (See page 23.)
❚❚ **(pause):** Press to stop the tape temporarily. Press the PLAY button to release the pause mode. When pressed together with the ○ REC/REC MUTE before recording, the unit will enter the record-pause mode.

❿ **DOLBY NR switches**
The left switch switches on and off noise reduction and the right switch selects which noise reduction system (Dolby B NR or Dolby C NR) is to be used.

⓫ **Mic jacks (LEFT, RIGHT)**
(TD-X311A/B/E/G/U)
Connect microphones (with an impedance of 600 Ω to 10 kΩ) to these jacks.
With microphones connected to these jacks, the input to LINE IN (REC) or DIN (for G version) terminals is cut off automatically.

5 Location of Main Parts

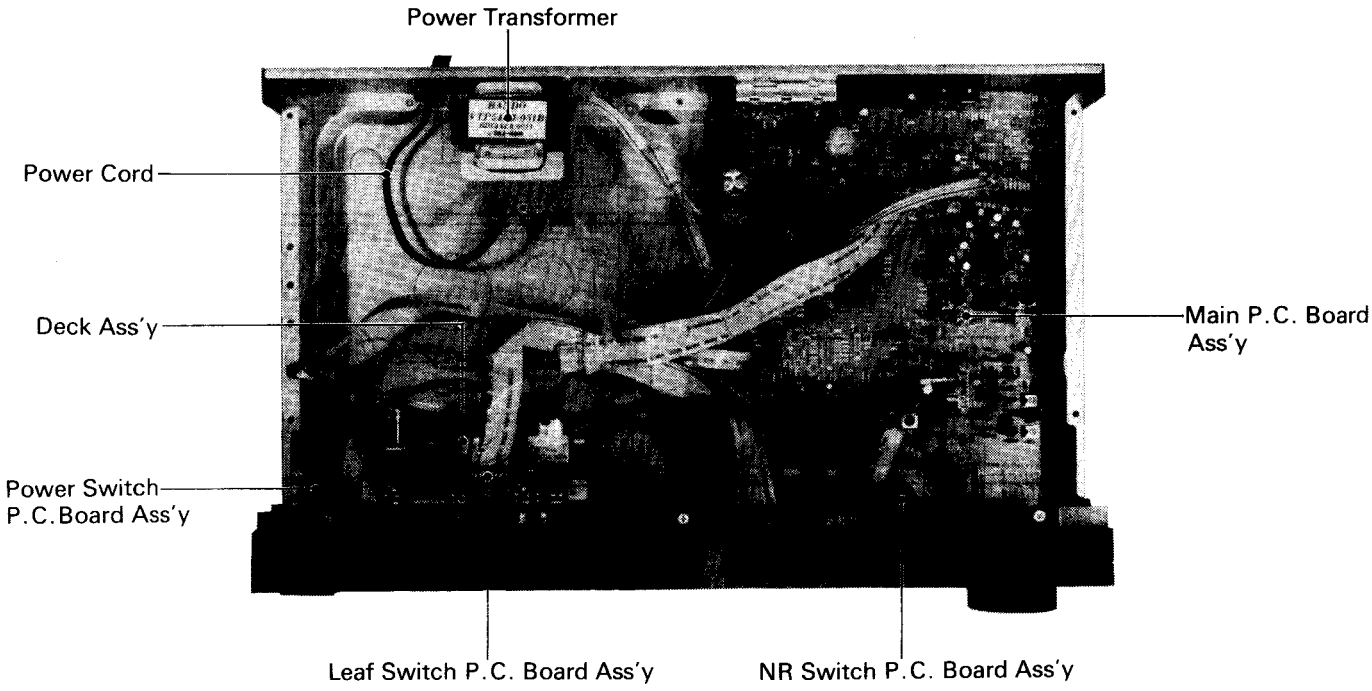


Fig. 5-1

6 Removal of Main Parts

■ Enclosure Section

■ **Top cover**

1. Remove four screws retaining the both sides of the top cover.
2. Remove two screws retaining the back sides of the top cover.

■ **Bottom cover**

Remove six screws ① ①' retaining the top and bottom side of the bottom cover. (Fig. 6-1)

■ **Front plate**

Remove five screws ② retaining the top and bottom side of the front plate. (Fig. 6-2)

■ **Front panel**

1. Remove four screws ③ retaining the both sides of the front panel. (Fig. 6-2)
2. Disconnect connectors CP501, CP502, CP503, CP505 and CP901 of Main board ass'y.
3. If necessary, remove dressed wires temporarily.
4. Pull out the Main board ass'y.

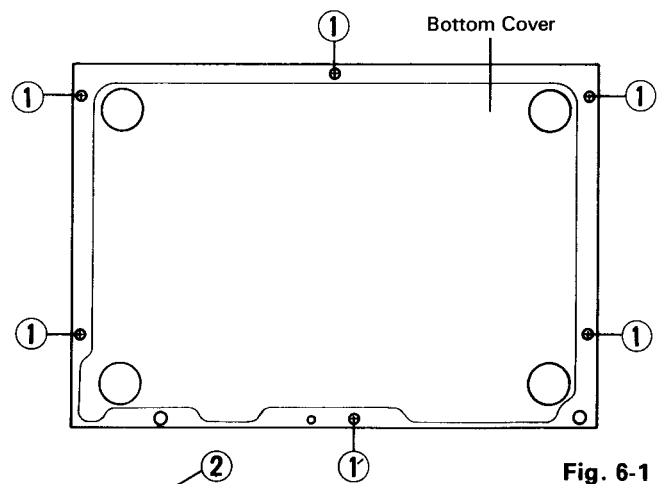


Fig. 6-1

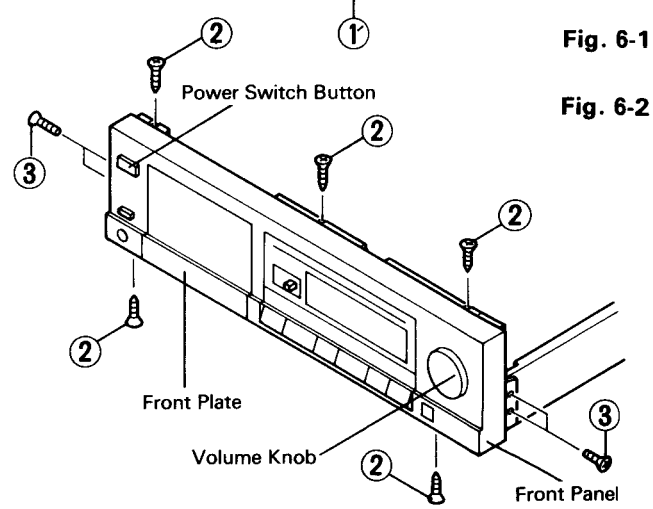


Fig. 6-2

■ Deck Section

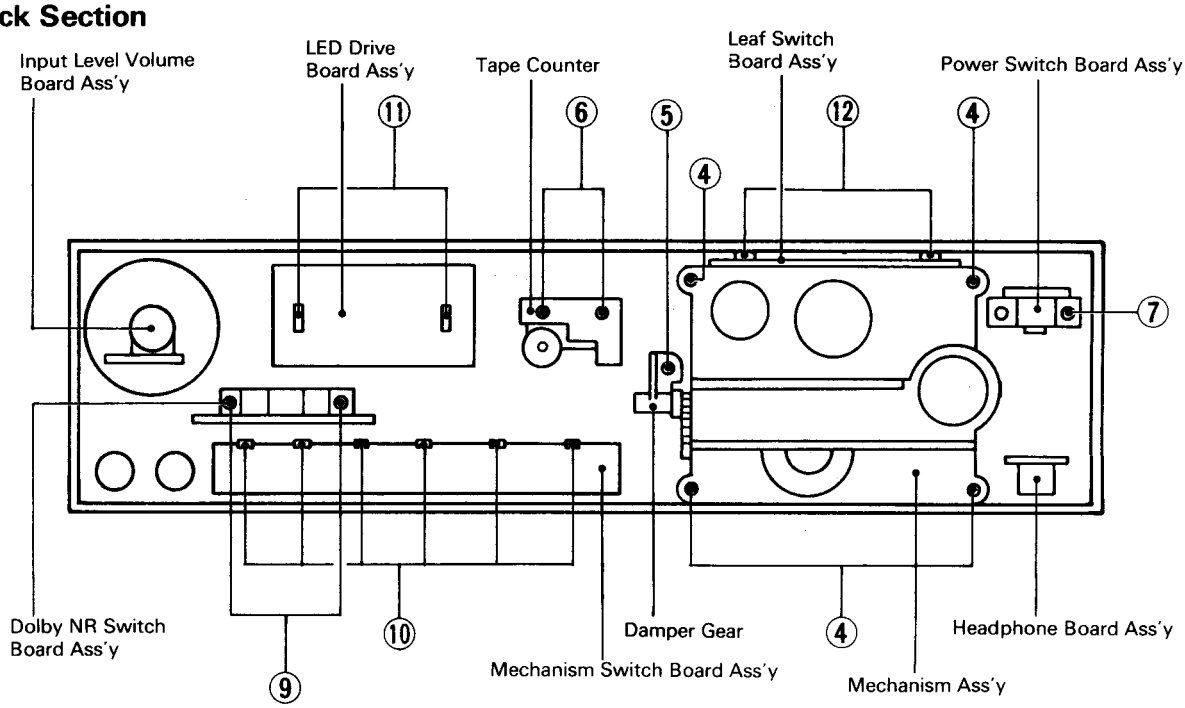


Fig. 6-3

■ **Mechanism ass'y**
1. Remove the counter belt.
2. Remove four screws ④ retaining the mechanism ass'y. (Fig. 6-3)
3. Press the EJECT button to open the cassette door.
4. Remove two screws ⑫ retaining the leaf switch board ass'y to mechanism ass'y. (Fig. 6-3)

■ **Cassette door**
1. Remove one screw ⑤ from damper gear. (Fig. 6-3)
2. Remove the cassette cover from the front panel disengaging its fulcrums on both sides and pull it out forward.

■ **Tape counter**
1. Remove two screws ⑥ retaining the tape counter. (Fig. 6-3)

■ **Input level volume board ass'y**
1. Pull out the volume knob. (Fig. 6-3)
2. Remove the nut for volume.

■ **Power switch board ass'y**
1. Pull out the power switch button.
2. Remove one screw ⑦ from power switch.

■ **Headphone board ass'y**
Pull out the headphone board ass'y and lift it upward.

■ **Dolby NR switch board ass'y**
1. Remove two screws ⑨ from the Dolby NR switch. (Fig. 6-3)
2. Remove two buttons.

■ **Mechanism switch board ass'y**
Remove six pawls ⑩ retaining the mechanism switch board ass'y. (Fig. 6-3)

■ **LED drive board ass'y**
Remove two pawls ⑪ retaining the LED drive board ass'y.

■ Mechanism (Deck) Section

■ REC/PB head ass'y (Fig. 6-4)

1. Remove two screws ① retaining the REC/PB head ass'y (one screw for adjustment).

■ Erase head (Fig. 6-4)

1. Remove two screws ② retaining the erase head.

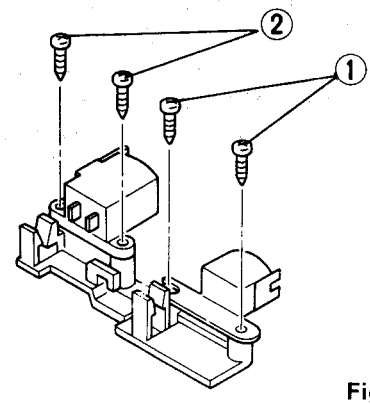


Fig. 6-4

■ Pinch roller ass'y

Push a pawl catching the pinch roller ass'y on the chassis in the direction of the arrow mark (Fig. 6-5) to remove it.

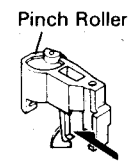


Fig. 6-5

■ Flywheel bracket (FM bracket)

1. Remove two screws ③ securing the eject bracket ass'y. (Fig. 6-6)
2. Remove two screws ④ securing the flywheel bracket from the both sides. (Fig. 6-6)

- When the FM bracket is removed, the main belt is disengaged at the same time.
- The capstan motor and flywheel ass'y can be replaced by this procedure. (Fig. 6-7)

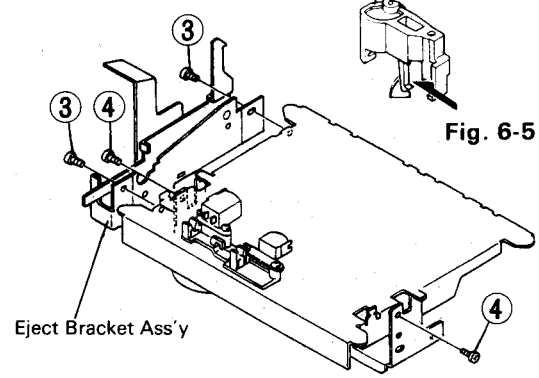


Fig. 6-6

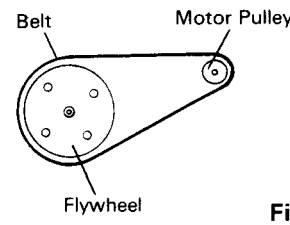


Fig. 6-7

■ Disk base unit

Remove two screws ⑤ and ⑥ securing the disk base unit. (Fig. 6-8, Fig. 6-9)

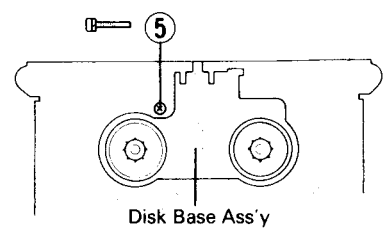


Fig. 6-8

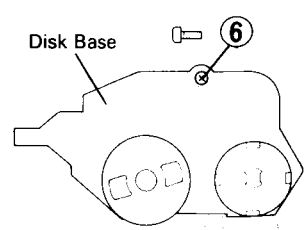


Fig. 6-9

- **Re-assembling of disk base unit**

1. Re-assemble the disk base unit in order of numbers (Ⓐ to Ⓔ) shown in Fig. 6-10.
   a) When setting the cam gear, make sure of its positioning so that the gear's wide side makes a right angle with the disk, while its small side is in parallel with the disk as shown in Fig. 6-11.

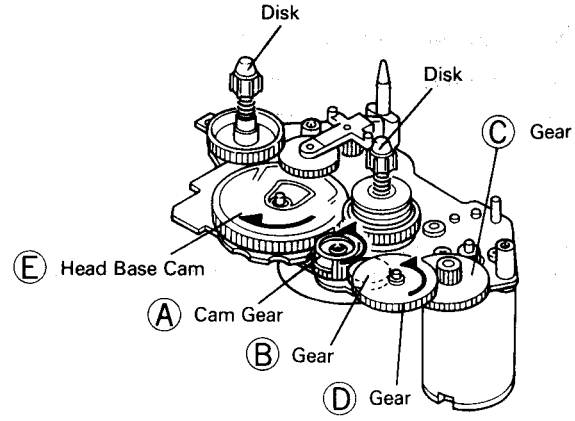


Fig. 6-10

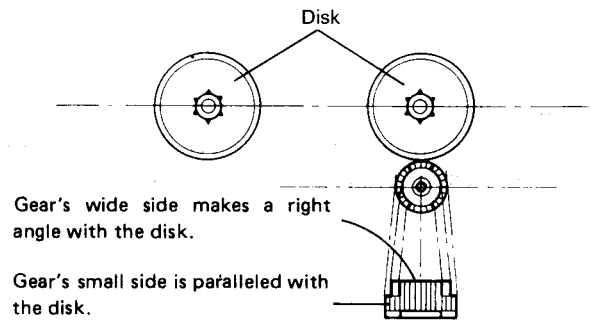


Fig. 6-11

   b) Engage the gears Ⓑ , Ⓒ and Ⓓ with each other. (Fig. 6-10)
   c) When putting back the head base cam Ⓔ , pay careful attention to positioning it so that big and small concaves are paralleled with the disk. (Fig. 6-12)
2. Turn the gears Ⓑ , Ⓓ in the direction of the arrow mark, and stop turning when the cam gear Ⓐ and the head base cam Ⓔ are free from each other (slit of the head base cam can be seen on the opposite side).

- **Fixing disk base unit to chassis**

Join together the head base cam and the pinch roller cam so as to catch on each other by the slits.(Fig. 6-13)

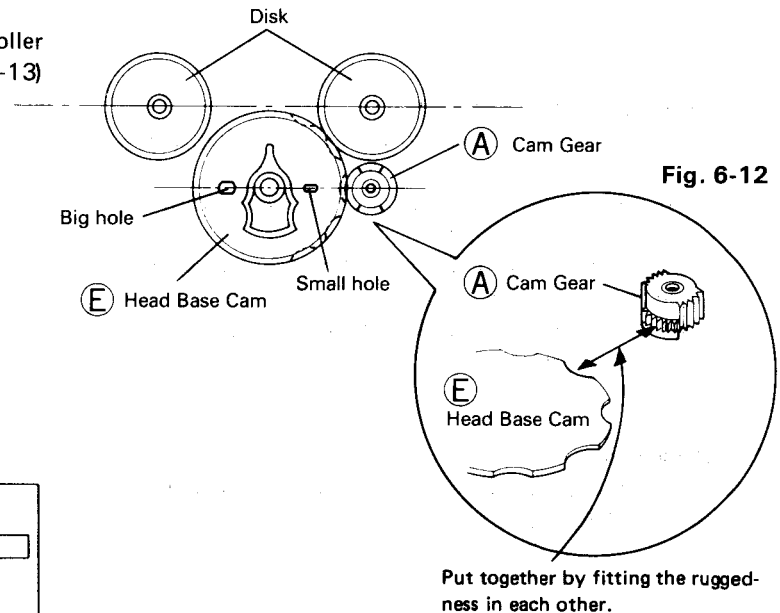


Fig. 6-12

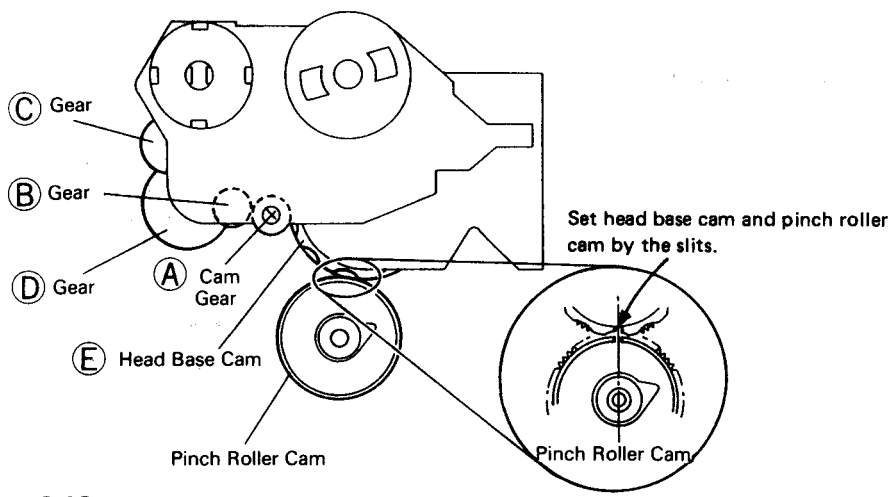


Fig. 6-13

7 Block Diagrams

[LEFT CHANNEL ONLY]

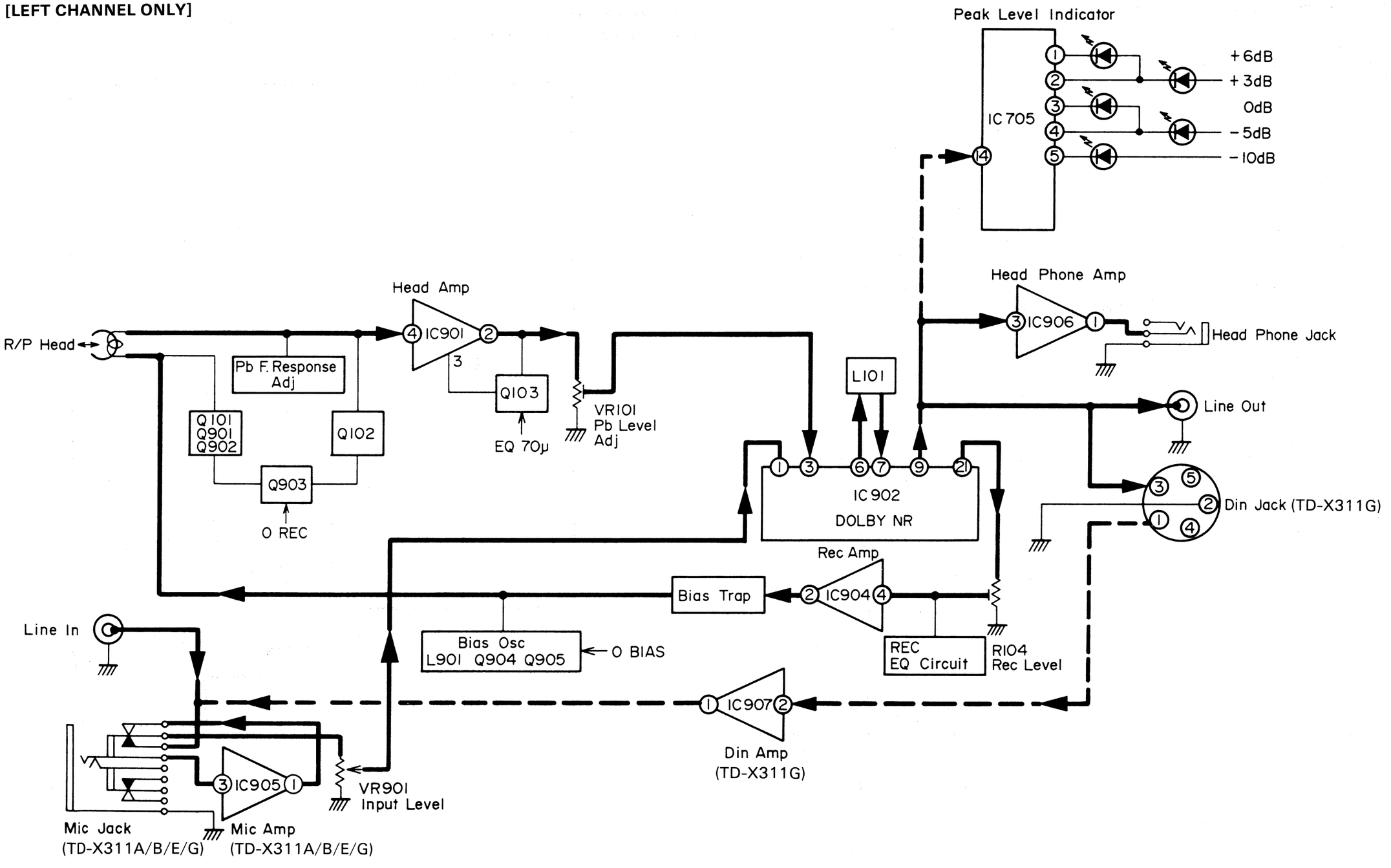


Fig. 7-1

8 Main Adjustments

1. Equipment and measuring instruments used for adjustments

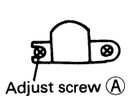
1) Electronic voltmeter
2) Audio frequency oscillator
   (range: 50—20 kHz and output 0 dB with impedance of 600 Ω)
3) Attenuator (impedance: 600 Ω)
4) Standard tape for REC/PB
   Maxell UD1 (TS-9) — Normal (SF) tape
   TDK SA — Chroma (SA) tape — or equivalent
   JVC ME — Metal tape
5) Reference tape for playback (JVC Test Tape)
   VTT712 (for tape speed, wow flutter adj.)
   VTT724 (for playback level)
   VTT739 (for playback frequency response)
   VTT703L (10 kHz) (for head azimuth adj.)
6) Resistor 600 Ω (for attenuator matching)
7) Distortion meter (bandpass filter)
8) Wow flutter meter
9) Frequency counter

■ **Power sources**
Set the line voltage selector switch to 240 V/230 V/220 V/127 V/120 V/110 V according to your local voltage.

AC 240 V, 50/60 Hz (TD-X311A/B)
AC 220 V, 50/60 Hz (TD-X311E/G)
AC 120 V, 60 Hz (TD-X311C/J)
AC 230 V/127 V/110 V, 50/60 Hz (TD-X311U)

2. Mechanism adjustment procedure

● **Notice: 0 dBs = 0.775 (V)**

Item	Adjustment	Adjusting point	Standard value	Remarks
Adjusting motor speed	1. Connect a frequency counter to the LINE OUT terminals. 2. Play back the VTT712 test tape. 3. Adjust volume in motor for normal speed at 3000 Hz.	Volume in Motor	Normal speed: 3000 ± 15 Hz	
Checking wow and flutter	Connect a wow and flutter meter to LINE OUT terminals. Play back the VTT712 test tape. Check to see if the reading of the meter is within 0.13% (WRMS).		0.13% (WRMS)	If the reading becomes moving value even if confirming to the standard, a reclaim may be raised. Repairs are necessary.
Checking playback torque	Employ a torque testing cassette tape for the checking, or remove the cassette cover and use a torque gauge.		30—70 gr-cm	If the standard torque is not obtained, replace the take-up disk assembly.
Checking fast forward torque	Measure the torque in the fast forward mode in the same manner as in the above.		70—200 gr-cm	If the standard torque is not obtained, perform the following. 1. Clean the capstan belt, the idler circumference, the motor pulley, the take-up reel disk circumference, the flywheel circumference, etc. 2. Replace the belt and idler.
Checking rewind torque	Measure the torque in the rewind mode in the same manner as in the above.		70—200 gr-cm	If the standard torque is not obtained, clean the capstan belt, idler, motor pulley, flywheel circumference, rewinding idler circumference, left reel disk circumference, etc.
Adjusting Head azimuth	1. Connect an electronic voltmeter to the LINE OUT terminals. 2. Playback the VTT703L test tape. 3. Adjust the head angle with the screw Ⓐ until the reading of the electronic voltmeter becomes maximum for both channels.	Screw		

3. Electrical adjustments location

● **Main Amp. P.C. Board (parts assembly side view)**

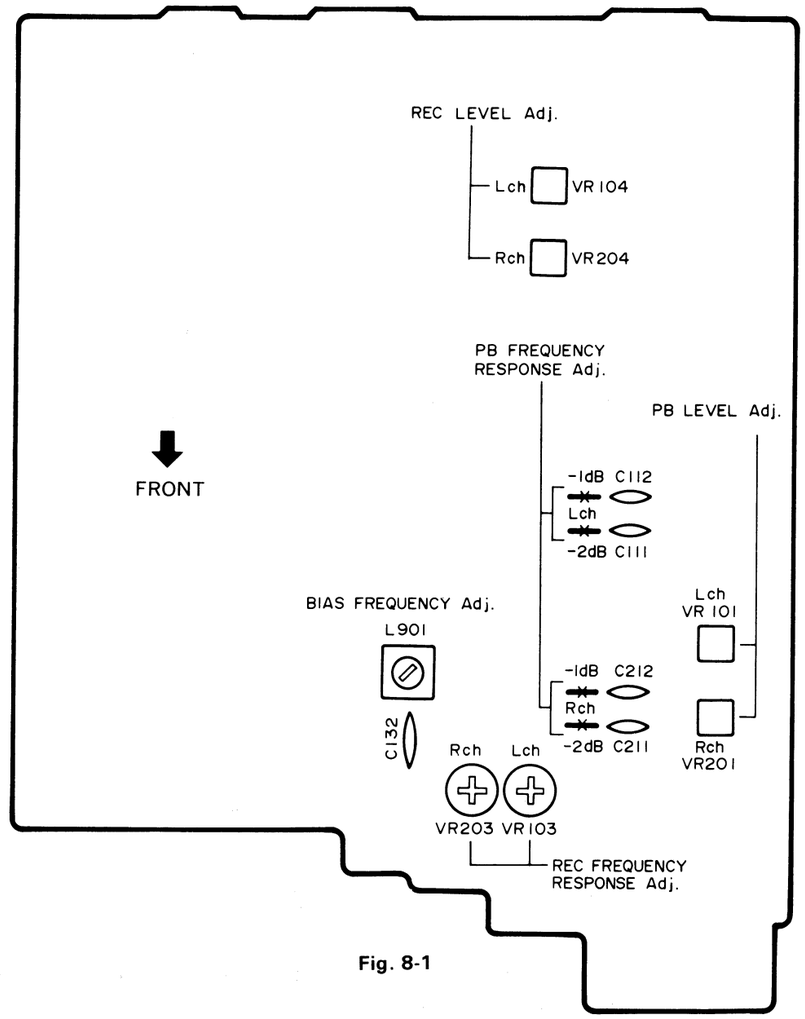
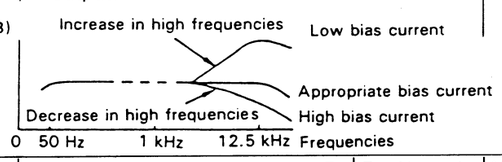
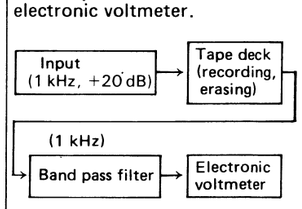


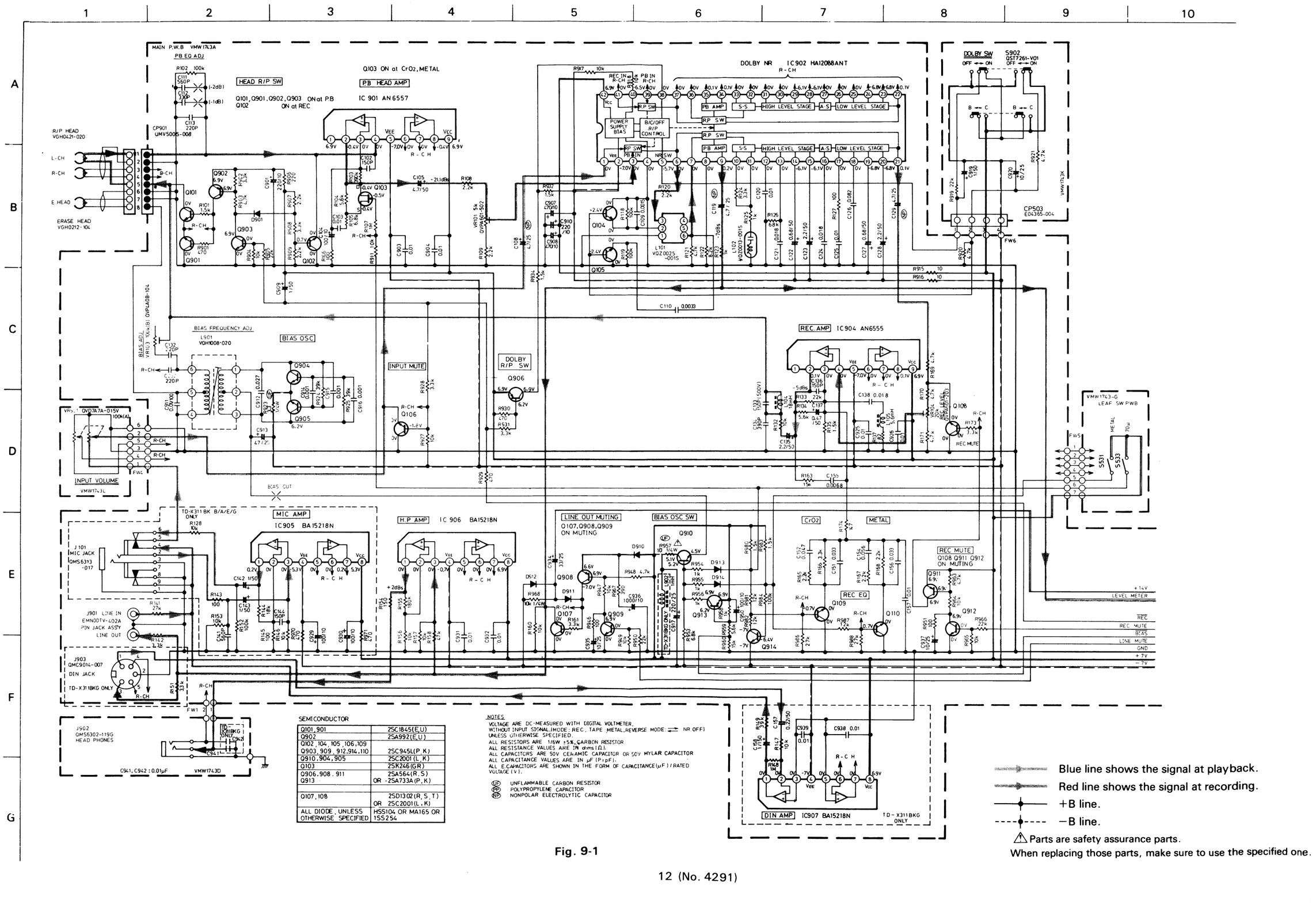
Fig. 8-1

4. Electrical circuit adjustment procedure

Perform the tape transport checks and head azimuth adjustment before following checks and adjustments.
Adjustment should be performed in the order of alignment steps.
In the steps marked with an asterisk (*), adjustment should be performed after replacing the heads.
Perform this adjustment with the NR switch set to OFF.

Step	Item	Adjustment	Adjusting point	Standard value	Remarks
*1	Confirming playback gain	Play back VTT724, then confirm that the level at LINE OUT is −8 dBs ± 0.5 dB. Adjust VR101 (L) and VR201 (R) so that LINE OUT level becomes −8 dBs.	L : VR101 R : VR201	−8 dBs ± 1 dB	When the head is replaced, adjust playback gain level. Cheeking : −24 ± 2 dBs at headphone output level. − 8 ± 1 dBs at DIN output level. (TD-X311G)
*2	Playback frequency response	Play back VTT739, then confirm that the level of 1 kHz and 10 kHz signals is 0 ± 3 dB. **Note**: Before adjustment, disconnect [−1 dB] [−2 dB] (L-ch) and [−1 dB] [−2 dB] (R-ch) so that the outputs of 1 kHz and 10 kHz signals are flat.	L : [−1 dB] [−2 dB] R : [−1 dB] [−2 dB]	0 ± 3 dB	L : [−1 dB] cut by −1 dB (C112) [−2 dB] cut by −2 dB (C111) R : [−1 dB] cut by −1 dB (C212) [−2 dB] cut by −2 dB (C211)
*3	Adjusting bias frequency	Connect the frequency counter to the C132 on body, then adjust L901 so that the counter reads 95 kHz.	L901	95 kHz ± 3 kHz	METAL Position
*4	Recording frequency response	1) NR switch: OFF 2) Record a 1 kHz signal at an input reference level of −20 dB, then record 12.5 kHz signals and play them back. At this time, adjust VR103 and VR203 so that the deviation of 12.5 kHz outputs satisfy the standard values with respect to 1 kHz output. 	For Normal tape L : VR103 R : VR203	With respect to 1 kHz reference: At 12.5 kHz : 0 ± 0.5 kHz	
*5	Recording gain	1) Apply a 1 kHz signal to the LINE IN terminals, record a 1 kHz signal at −20dBs input for both (L and R) channels on a normal tape. 2) Play back the recorded part, and adjust the recording level controls so that LINE OUT terminal level becomes −8 dBs. Then adjust VR104 and VR204 so that LINE OUT terminal level becomes −8 dBs.	For Normal tape: L : VR104 R : VR204	Normal: −8 ± 1 dBs CrO_2 : −8 ± 2 dBs Metal: −8 ± 2 dBs	Perform the adjustment using a normal tape. Level difference between recording and playback for CrO_2 and metal tapes should be less than 2 dB, and that between left and right channels should also be less than 3 dB.
*6	Checking record/ playback distortion	1) Record a 1 kHz, −8 dB signal to LINE IN terminals. 2) Play back the recorded part. Check the output with a distortion meter to see if the value conforms to the standard value.		Normal tape: Less than 2% CrO_2 tape: Less than 3% Metal tape: Less than 2% (THD)	Be sure to perform this checking following bias current and recording level checking.
7	Checking signal to noise ratio in recording/ playback	1) Record a 1 kHz, −20 dBs signal to LINE IN terminals. Stop the input by disconnecting from the terminal to perform non-signal recording. 2) Play back the recorded part. Measure the 0 dB recording output and the non-signal recording output for comparison using an electronic voltmeter. Check to see if the value conforms to the standard value.		Normal, CrO_2 & Metal tapes: More than 42 dB	Apply an input level to LINE IN terminals with the recording level controls set to maximum so that the peak level indicator reads 0 dB.
8	Checking erasing coefficient	1) Apply a 1 kHz, 0 dB signal to the LINE IN terminals. 2) Perform recording with the signal enhanced by 20 dB. 3) Erase a part of the recording. 4) Measure the output difference between the erased part and non-erased part to compare with an electronic voltmeter.		More than 60dB	For the measurement using a metal tape, connect a band pass filter between the deck and the electronic voltmeter. 
9	Checking minimum input level	1) Apply a 1 kHz signal to the LINE IN terminals, check the LINE OUT terminals level at −8 dBs with attenuator to see if the value confirms to the standard value.		LINE IN : −20 ± 3 dBs MIC IN : −66 ± 3 dBs (TD-X311A/B/E/G/U) DIN IN : −24 ± 3 dBs (TD-X311G)	Level difference between left and right channels should also be less than 3 dB.

9 Standard Schematic Diagrams



SEMICONDUCTOR

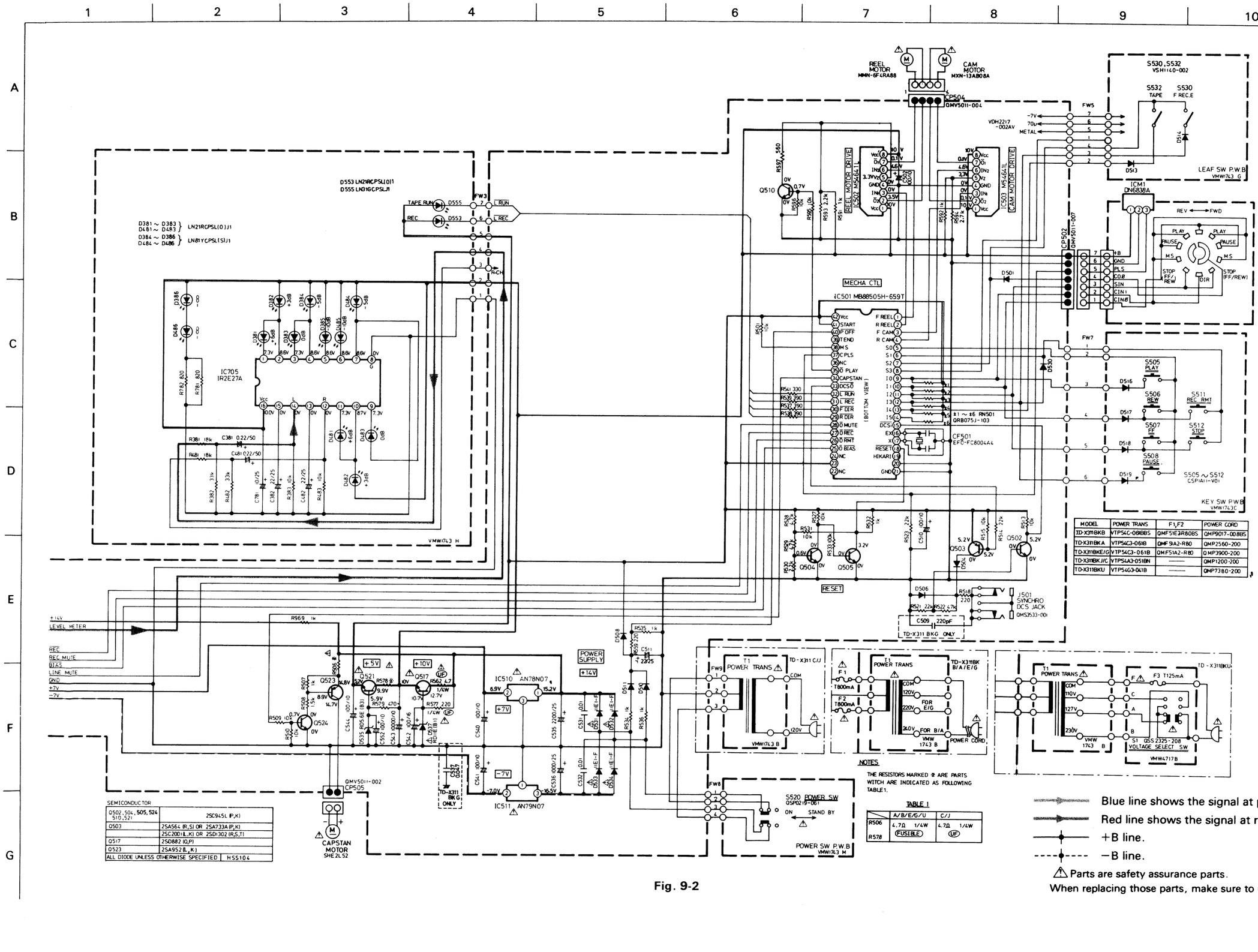
Q101, 901	2SC1845(E,U)
Q902	2SA992(E,U)
Q102, 104, 105, 106, 109 Q903, 909, 912, 914, 110	2SC945L(P,K)
Q910, 904, 905	2SC2001(L,K)
Q103	2SK246(GR)
Q906, 908, 911 Q913	2SA564(R,S) OR 2SA733A(P,K)
Q107, 108	2SD1302(R,S,T) OR 2SC2001(L,K)
ALL DIODE, UNLESS OTHERWISE SPECIFIED	HSS104 OR MA165 OR 1SS254

NOTES
VOLTAGE ARE DC-MEASURED WITH DIGITAL VOLTMETER.
WITHOUT INPUT SIGNAL (MODE: REC, TAPE, METAL; REVERSE MODE: NR OFF)
UNLESS OTHERWISE SPECIFIED.
ALL RESISTORS ARE 1/6W ±5%, CARBON RESISTOR.
ALL RESISTANCE VALUES ARE IN ohms (Ω).
ALL CAPACITORS ARE 50V CERAMIC CAPACITOR OR 50V MYLAR CAPACITOR
ALL CAPACITANCE VALUES ARE IN μF (P=pF).
ALL E.CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE(μF) / RATED VOLTAGE (V).

UF UNFLAMMABLE CARBON RESISTOR
PP POLYPROPYLENE CAPACITOR
NP NONPOLAR ELECTROLYTIC CAPACITOR

Blue line shows the signal at playback.
Red line shows the signal at recording.
+B line.
−B line.
⚠ Parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

Fig. 9-1



MODEL	POWER TRANS	F1,F2	POWER CORD
TD-X311BKB	VTP54C-08BBS	QMF51E2R80BS	QMP9017-008BS
TD-X311BKA	VTP54C3-061B	QMF51A2-R80	QMP2560-200
TD-X311BKE/G	VTP54C3-061B	QMF51A2-R80	QMP3900-200
TD-X311BKJ/C	VTP54A3-051BN	——	QMP1200-200
TD-X311BKU	VTP54G3-041B	——	QMP7380-200

SEMICONDUCTOR	
Q502, 504, 505, 524 510, 521	2SC945L (P,K)
Q503	2SA564 (R,S) OR 2SA733A (P,K)
	2SC2001 (L,K) OR 2SD1302 (R,S,T)
Q517	2SD882 (Q,P)
Q523	2SA952 (L, K)
ALL DIODE UNLESS OTHERWISE SPECIFIED	HSS104

NOTES

THE RESISTORS MARKED * ARE PARTS WITCH ARE INDICATED AS FOLLOWING TABLE1.

TABLE 1

	A/B/E/G/U	C/J
R506	4.7Ω 1/4W (FUSIBLE)	4.7Ω 1/4W (UF)
R578		

Blue line shows the signal at play back.

Red line shows the signal at recording.

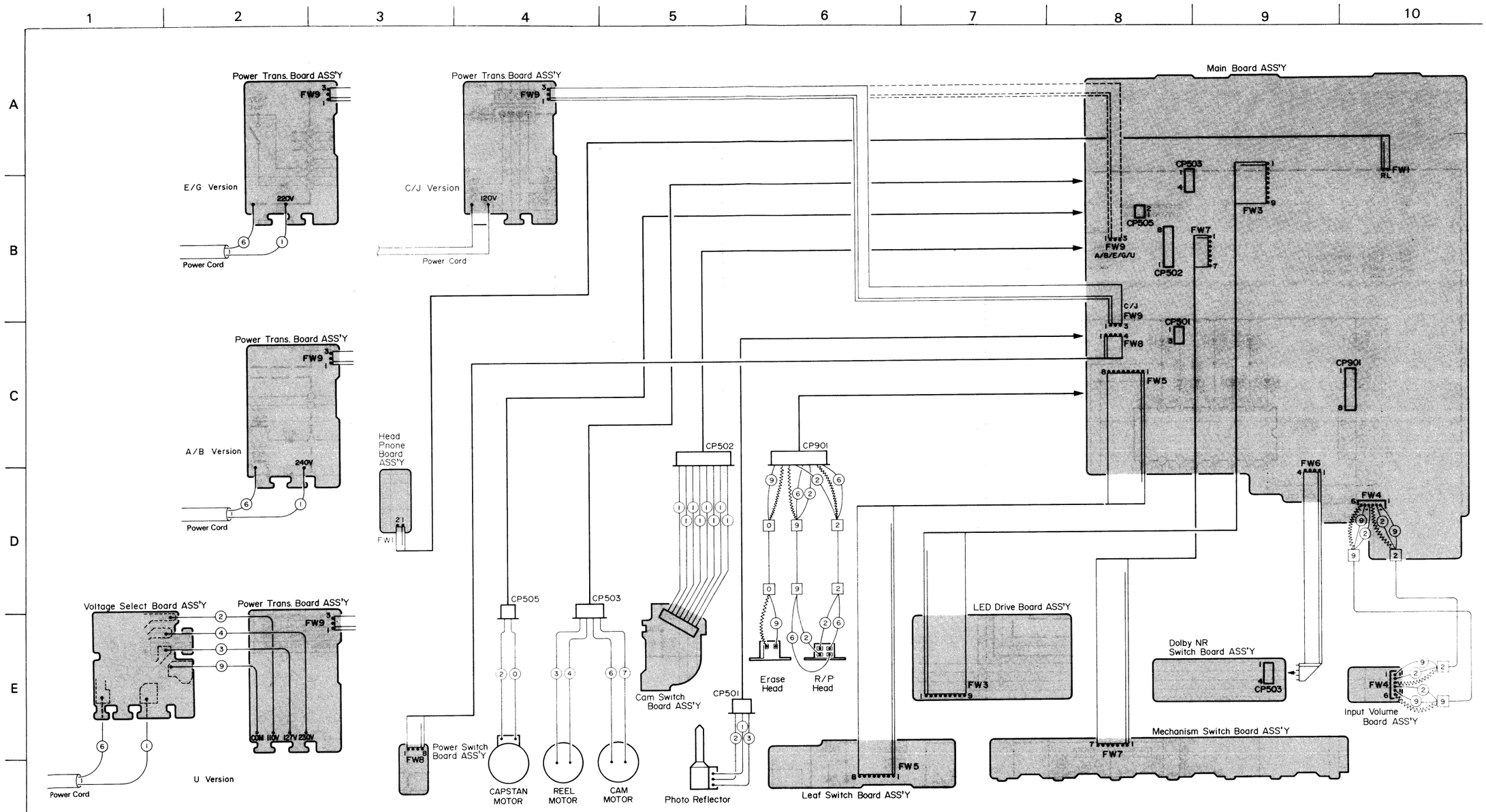
+B line.

−B line.

⚠ Parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

Fig. 9-2

10 Wiring Connections



NOTE : Color of wires subject to change without notice.

Color codes are shown below.

1	.....	Brown
2	.....	Red
3	.....	Orange
4	.....	Yellow
5	.....	Green
6	.....	Blue
7	.....	Violet
8	.....	Gray
9	.....	White
0	.....	Black
D	.....	Pink
C	.....	Light Blue

Fig. 10-1

11 Location of P.C. Board Parts and Parts List

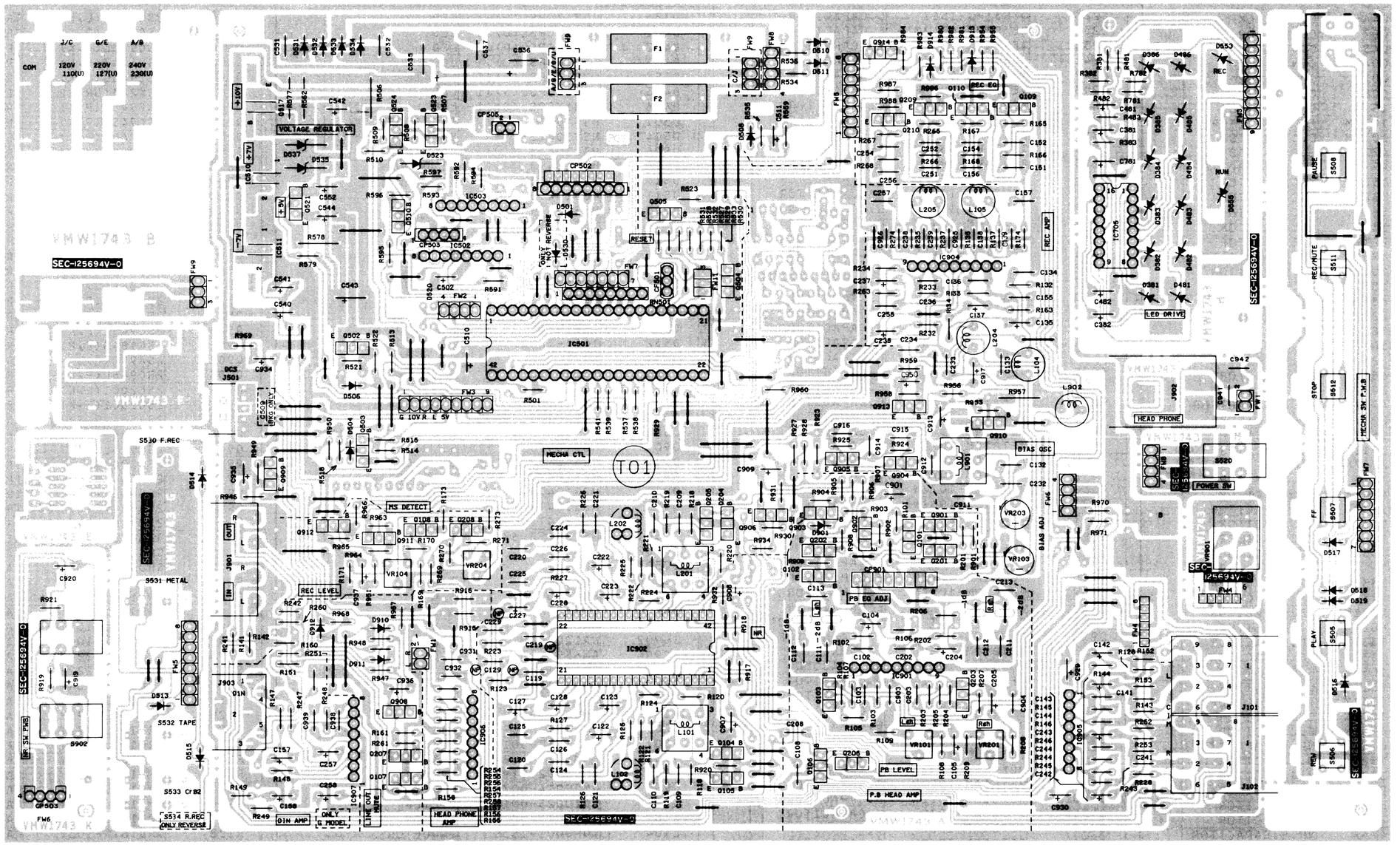
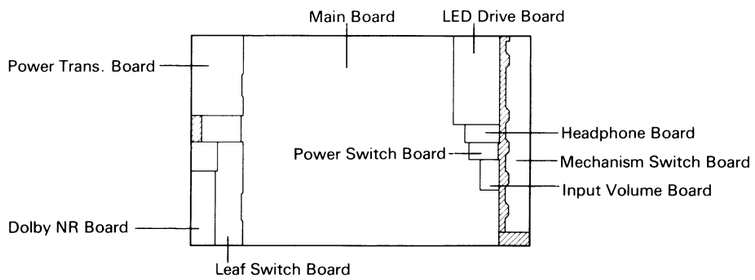
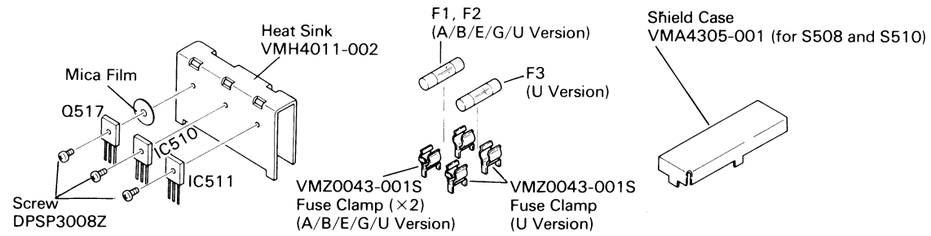


Fig. 11-1





Main Board Parts List

⚠ Parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

⚠	REF. NO	PARTS NO.	PARTS NAME
	CP501	EFO-FC8004A4	CERA LOCK
	CP502	QMV5011-007	CONNECTOR
	CP503	E04365-004S	CONNECTOR
	CP504	QMV5011-004	CONNECTOR
	CP505	QMV5011-002	CONNECTOR
	CP901	QMV5005-008	CONNECTOR
	C102	QCS31HJ-151Z	C.CAPACITOR
	C103	QFV71HJ-103ZM	TF CAPACITOR
	C104	QETC1AM-107ZN	E.CAPACITOR
	C105	QETC1HM-475ZN	E.CAPACITOR
	C108	QEN61EM-475Z	NP.E.CAPACITOR
	C109	QFN31HJ-152Z	M.CAPACITOR
	C110	QFN31HJ-332Z	M.CAPACITOR
	C111	QCS31HJ-561Z	C.CAPACITOR
	C112	QCS31HJ-331Z	C.CAPACITOR
	C113	QCS31HJ-221Z	C.CAPACITOR
	C119	QEN61EM-475Z	NP.E.CAPACITOR
	C120	QFV71HJ-103ZM	TF CAPACITOR
	C121	QFV71HJ-183ZM	TF.CAPACITOR
	C122	QETC1HM-684ZN	E.CAPACITOR
	C123	QETC1HM-225ZN	E.CAPACITOR
	C124	QFV71HJ-183ZM	TF.CAPACITOR
	C125	QFV71HJ-103ZM	TF CAPACITOR
	C126	QFV71HJ-823ZM	TF.CAPACITOR
	C127	QETC1HM-684ZN	E.CAPACITOR
	C128	QETC1HM-225ZN	E.CAPACITOR
	C129	QEN61EM-475Z	NP.E.CAPACITOR
	C132	QCS31HJ-221Z	C.CAPACITOR
	C133	QCS32HJ-151ZV	C CAPACITOR
	C134	QCS31HJ-391Z	C.CAPACITOR
	C135	QETC1HM-225ZN	E.CAPACITOR
	C136	QCS31HJ-151Z	C.CAPACITOR
	C137	QETC1HM-474ZM	E.CAPACITOR
	C138	QFV71HJ-183ZM	TF.CAPACITOR
	C141	QCS31HJ-561Z	C.CAPACITOR
	C142	QETC1HM-105ZN	E.CAPACITOR
	C143	QETC1HM-105ZN	E.CAPACITOR
	C144	QCS31HJ-151Z	C.CAPACITOR
	C151	QFV71HJ-333ZM	TF.CAPACITOR
	C152	QFV71HJ-473ZM	TF.CAPACITOR
	C154	QFV71HJ-563ZM	TF.CAPACITOR
	C155	QFN31HJ-682Z	M.CAPACITOR
	C156	QFV71HJ-333ZM	TF.CAPACITOR
	C157	QFV71HJ-103ZM	TF CAPACITOR
	C158	QETC1HM-105ZN	E.CAPACITOR
	C202	QCS31HJ-151Z	C.CAPACITOR
	C203	QFV71HJ-103ZM	TF CAPACITOR
	C204	QETC1AM-107ZN	E.CAPACITOR
	C205	QETC1HM-475ZN	E.CAPACITOR
	C208	QEN61EM-475Z	NP.E.CAPACITOR
	C209	QFN31HJ-152Z	M.CAPACITOR
	C210	QFN31HJ-332Z	M.CAPACITOR
	C211	QCS31HJ-561Z	C.CAPACITOR
	C212	QCS31HJ-331Z	C.CAPACITOR
	C213	QCS31HJ-221Z	C.CAPACITOR
	C219	QEN61EM-475Z	NP.E.CAPACITOR
	C220	QFV71HJ-103ZM	TF CAPACITOR
	C221	QFV71HJ-183ZM	TF.CAPACITOR
	C222	QETC1HM-684ZN	E.CAPACITOR
	C223	QETC1HM-225ZN	E.CAPACITOR
	C224	QFV71HJ-183ZM	TF.CAPACITOR
	C225	QFV71HJ-103ZM	TF CAPACITOR
	C226	QFV71HJ-823ZM	TF.CAPACITOR
	C227	QETC1HM-684ZN	E.CAPACITOR
	C228	QETC1HM-225ZN	E.CAPACITOR
	C229	QEN61EM-475Z	NP.E.CAPACITOR
	C232	QCS31HJ-221Z	C.CAPACITOR
	C233	QCS32HJ-151ZV	C CAPACITOR
	C234	QCS31HJ-391Z	C.CAPACITOR
	C235	QETC1HM-225ZN	E.CAPACITOR
	C236	QCS31HJ-151Z	C.CAPACITOR
	C237	QETC1HM-474ZM	E.CAPACITOR
	C238	QFV71HJ-183ZM	TF.CAPACITOR
	C241	QCS31HJ-561Z	C.CAPACITOR
	C242	QETC1HM-105ZN	E.CAPACITOR
	C243	QETC1HM-105ZN	E.CAPACITOR
	C244	QCS31HJ-151Z	C.CAPACITOR
	C251	QFV71HJ-333ZM	TF.CAPACITOR
	C252	QFV71HJ-473ZM	TF.CAPACITOR
	C254	QFV71HJ-563ZM	TF.CAPACITOR
	C255	QFN31HJ-682Z	M.CAPACITOR
	C256	QFV71HJ-333ZM	TF.CAPACITOR
	C257	QFV71HJ-103ZM	TF CAPACITOR
	C258	QETC1HM-105ZN	E.CAPACITOR
	C381	QETC1HM-224ZN	E.CAPACITOR
	C382	QETC1EM-226ZN	E CAPACITOR
	C481	QETC1HM-224ZN	E.CAPACITOR
	C482	QETB1EM-226	E CAPACITOR
	C502	QETC1AM-107ZN	E.CAPACITOR
	C509	QCS31HJ-221Z	C.CAPACITOR
	C510	QETC1AM-107ZN	E.CAPACITOR
	C511	QETC1EM-226ZN	E CAPACITOR
	C531	QCF31HP-103Z	C.CAPACITOR
	C532	QCF31HP-103Z	C.CAPACITOR
	C535	QETB1EM-228N	E CAPACITOR
	C536	QET51ER-108N	E.CAPACITOR
	C537	QCF31HP-473Z	C.CAPACITOR
	C540	QETC1AM-107ZN	E.CAPACITOR
	C541	QETC1AM-107ZN	E.CAPACITOR
	C542	QETB1CM-107N	E CAPACITOR
	C543	QETB1AM-109N	E.CAPACITOR
	C544	QETC1AM-107ZN	E.CAPACITOR
	C552	QETC1AM-107ZN	E.CAPACITOR
	C781	QETC1EM-106ZN	E.CAPACITOR
	C901	QETB1AM-227	E CAPACITOR
	C903	QCF31HP-103Z	C.CAPACITOR
	C904	QCF31HP-103Z	C.CAPACITOR
	C907	QETC1AM-477ZN	E.CAPACITOR
	C908	QETC1AM-477ZN	E.CAPACITOR
	C909	QETC1HM-105ZN	E.CAPACITOR
	C910	QETA1AM-227N	E CAPACITOR
	C911	QFP82AJ-103	P.P.CAPACITOR
	C912	QFV71HJ-273ZM	TF.CAPACITOR
	C913	QETB1EM-476N	E CAPACITOR
	C914	QFN31HJ-102Z	M.CAPACITOR
	C915	QFN31HJ-102Z	M.CAPACITOR
	C916	QFN31HJ-102Z	M.CAPACITOR
	C917	QETB1EM-227N	E.CAPACITOR
	C919	QETC1HM-105ZN	E.CAPACITOR
	C920	QETC1EM-106ZN	E.CAPACITOR
	C925	QCF31HP-103Z	C.CAPACITOR
	C926	QCF31HP-103Z	C.CAPACITOR
	C929	QETC1AM-107ZN	E.CAPACITOR
	C930	QETC1AM-107ZN	E.CAPACITOR
	C931	QCF31HP-103Z	C.CAPACITOR
	C932	QCF31HP-103Z	C.CAPACITOR
	C934	QETC1EM-336ZN	E CAPACITOR
	C935	QETC1EM-106ZN	E.CAPACITOR
	C936	QETB1AM-108N	E.CAPACITOR
	C937	QETC1EM-106ZN	E.CAPACITOR
	C938	QCF31HP-103Z	C.CAPACITOR
	C939	QCF31HP-103Z	C.CAPACITOR
	C941	QCF31HP-103Z	C.CAPACITOR
	C942	QCF31HP-103Z	C.CAPACITOR
	C950	QETC1AM-107ZN	E.CAPACITOR
	D381	LN21RCPSL(O)J1	LED
	D382	LN21RCPSL(O)J1	LED
	D383	LN21RCPSL(O)J1	LED
	D384	LN81YCPSL(S)J1	LED
	D385	LN81YCPSL(S)J1	LED
	D386	LN81YCPSL(S)J1	LED
	D481	LN21RCPSL(O)J1	LED
	D482	LN21RCPSL(O)J1	LED
	D483	LN21RCPSL(O)J1	LED
	D484	LN81YCPSL(S)J1	LED
	D485	LN81YCPSL(S)J1	LED
	D486	LN81YCPSL(S)J1	LED
	D501	HSS104TJ	SI DIODE
	D504	HSS104TJ	SI DIODE
	D506	HSS104TJ	SI DIODE
	D508	HSS104TJ	SI DIODE
	D510	HSS104TJ	SI DIODE
	D511	HSS104TJ	SI DIODE
	D513	HSS104TJ	SI DIODE
	D514	HSS104TJ	SI DIODE
	D515	HSS104TJ	SI DIODE
	D516	HSS104TJ	SI DIODE
	D517	HSS104TJ	SI DIODE
	D518	HSS104TJ	SI DIODE
	D519	HSS104TJ	SI DIODE
	D530	HSS104TJ	SI DIODE
⚠	D531	11E1-TB2	SI DIODE
⚠	D532	11E1-TB2	SI DIODE
⚠	D533	11E1-TB2	SI DIODE
⚠	D534	11E1-TB2	SI DIODE
	D535	RD5.6E(B3)	ZENER DIODE
	D537	RD11E(B1)	Z DIODE
	D553	LN21RCPSL(O)J1	LED
	D555	LN31GCPSLJ1	LED
	D901	HSS104TJ	SI DIODE
	D910	HSS104TJ	SI DIODE
	D911	HSS104TJ	SI DIODE
	D912	HSS104TJ	SI DIODE
	D913	HSS104TJ	SI DIODE
	D914	HSS104TJ	SI DIODE
	IC501	MB88505H-674T	IC(CPU)
	IC502	M54641L	IC
	IC503	M54641L	IC
⚠	IC510	AN78N07	I.C
⚠	IC511	AN79N07	I.C
	IC705	IR2E27A	I.C
	IC901	AN6557	I C
	IC902	HA12088ANT	DOLBY NR I.C
	IC904	AN6555	I.C
	IC905	BA15218N	IC
	IC906	BA15218N	IC
	IC907	BA15218N	IC
	J101	QMS6313-017	JACK
	J201	QMS6313-017	JACK
	J501	QMS3533-001	JACK
	J901	EMN00TV-402A	PIN JACK
	J902	QMS6302-119G	JACK
	J903	QMC9014-007	DIN SOCKET
	L101	VQZ0025-001S	FILTER
	L102	VQZ0013-001S	FILTER
	L104	VQP0001-183S	INDUCTOR
	L105	VQP0001-562S	INDUCTOR
	L201	VQZ0025-001S	FILTER
	L202	VQZ0013-001S	FILTER
	L204	VQP0001-183S	INDUCTOR
	L205	VQP0001-562S	INDUCTOR
	L901	VQH1008-020	OSC COIL(BIAS)
	L902	QWY124-5.0Y	BUS WIRE
	Q101	2SC1845(E,U)-T	TRANSISTOR
	Q102	2SC945L(P,K)-T	TRANSISTOR
	Q103	2SK246(GR)E2	FET
	Q104	2SC945L(P,K)-T	TRANSISTOR
	Q105	2SC945L(P,K)-T	TRANSISTOR
	Q106	2SC945L(P,K)-T	TRANSISTOR
	Q107	2SC2001(L,K)-T	TRANSISTOR
	Q108	2SC2001(L,K)-T	TRANSISTOR
	Q109	2SC945L(P,K)-T	TRANSISTOR
	Q110	2SC945L(P,K)-T	TRANSISTOR
	Q201	2SC1845(E,U)-T	TRANSISTOR
	Q202	2SC945L(P,K)-T	TRANSISTOR
	Q203	2SK246(GR)E2	FET
	Q204	2SC945L(P,K)-T	TRANSISTOR
	Q205	2SC945L(P,K)-T	TRANSISTOR
	Q206	2SC945L(P,K)-T	TRANSISTOR
	Q207	2SC2001(L,K)-T	TRANSISTOR
	Q208	2SC2001(L,K)-T	TRANSISTOR
	Q209	2SC945L(P,K)-T	TRANSISTOR
	Q210	2SC945L(P,K)-T	TRANSISTOR
	Q502	2SC945L(P,K)-T	TRANSISTOR
	Q503	2SA564(R,S)TA	TRANSISTOR
	Q504	2SC945L(P,K)-T	TRANSISTOR
	Q505	2SC945L(P,K)-T	TRANSISTOR
	Q510	2SC945L(P,K)-T	TRANSISTOR
⚠	Q517	2SD882(Q,P)	TRANSISTOR
⚠	Q521	2SC945L(P,K)-T	TRANSISTOR
	Q523	2SA952(L,K)-T	TRANSISTOR
	Q524	2SC945L(P,K)-T	TRANSISTOR
	Q901	2SC1845(E,U)-T	TRANSISTOR
	Q902	2SA992(E,U)-T	TRANSISTOR
	Q903	2SC945L(P,K)-T	TRANSISTOR
	Q904	2SC2001(L,K)-T	TRANSISTOR
	Q905	2SC2001(L,K)-T	TRANSISTOR
	Q906	2SA564(R,S)TA	TRANSISTOR
	Q908	2SA564(R,S)TA	TRANSISTOR
	Q909	2SC945L(P,K)-T	TRANSISTOR
	Q910	2SC2001(L,K)-T	TRANSISTOR
	Q911	2SA564(R,S)TA	TRANSISTOR
	Q912	2SC945L(P,K)-T	TRANSISTOR
	Q913	2SA564(R,S)TA	TRANSISTOR
	Q914	2SC945L(P,K)-T	TRANSISTOR
	RN501	QRB0753J-103	NETWORK RESIST
	R101	QRD161J-152Y	CARBON RESISTOR
	R102	QRD161J-104Y	CARBON RESISTOR
	R103	QRD161J-394Y	CARBON RESISTOR
	R104	QRD161J-562Y	CARBON RESISTOR
	R105	QRD161J-682Y	CARBON RESISTOR
	R106	QRD161J-101Y	CARBON RESISTOR
	R107	QRD161J-103Y	CARBON RESISTOR
	R108	QRD161J-222Y	CARBON RESISTOR
	R109	QRD161J-222Y	CARBON RESISTOR
	R118	QRD161J-104Y	CARBON RESISTOR
	R119	QRD161J-104Y	CARBON RESISTOR
	R120	QRD161J-222Y	CARBON RESISTOR
	R121	QRD161J-472Y	CARBON RESISTOR
	R122	QRD161J-822Y	CARBON RESISTOR
	R123	QRD161J-102Y	CARBON RESISTOR
	R124	QRD161J-332Y	CARBON RESISTOR
	R125	QRD161J-102Y	CARBON RESISTOR
	R126	QRD161J-683Y	CARBON RESISTOR
	R127	QRD161J-101Y	CARBON RESISTOR
	R128	QRD161J-103Y	CARBON RESISTOR
	R132	QRD161J-103Y	CARBON RESISTOR
	R133	QRD161J-223Y	CARBON RESISTOR
	R134	QRD161J-562Y	CARBON RESISTOR
	R135	QRD161J-152Y	CARBON RESISTOR
	R137	QRD161J-820Y	CARBON RESISTOR
	R141	QRD161J-273Y	CARBON RESISTOR
	R142	QRD161J-332Y	CARBON RESISTOR
	R143	QRD161J-101Y	CARBON RESISTOR
	R144	QRD161J-153Y	CARBON RESISTOR
	R145	QRD161J-101Y	CARBON RESISTOR
	R146	QRD161J-103Y	CARBON RESISTOR
	R147	QRD161J-103Y	CARBON RESISTOR
	R148	QRD161J-105Y	CARBON RESISTOR
	R149	QRD161J-393Y	CARBON RESISTOR

⚠ Parts are safety assurance parts
When replacing those parts, make sure to use the specified one.

⚠	REF. NO	PARTS NO.	PARTS NAME
	R151	QRD161J-332Y	CARBON RESISTOR
	R152	QRD161J-104Y	CARBON RESISTOR
	R153	QRD161J-103Y	CARBON RESISTOR
	R154	QRD161J-151Y	CARBON RESISTOR
	R155	QRD161J-184Y	CARBON RESISTOR
	R156	QRD161J-103Y	CARBON RESISTOR
	R157	QRD161J-103Y	CARBON RESISTOR
	R158	QRD161J-473Y	CARBON RESISTOR
	R160	QRD161J-103Y	CARBON RESISTOR
	R161	QRD161J-332Y	CARBON RESISTOR
	R163	QRD161J-153Y	CARBON RESISTOR
	R165	QRD161J-222Y	CARBON RESISTOR
	R166	QRD161J-332Y	CARBON RESISTOR
	R167	QRD161J-222Y	CARBON RESISTOR
	R168	QRD161J-222Y	CARBON RESISTOR
	R169	QRD161J-472Y	CARBON RESISTOR
	R170	QRD161J-472Y	CARBON RESISTOR
	R171	QRD161J-472Y	CARBON RESISTOR
	R173	QRD161J-332Y	CARBON RESISTOR
	R174	QRD161J-470Y	CARBON RESISTOR
	R201	QRD161J-152Y	CARBON RESISTOR
	R202	QRD161J-104Y	CARBON RESISTOR
	R203	QRD161J-394Y	CARBON RESISTOR
	R204	QRD161J-562Y	CARBON RESISTOR
	R205	QRD161J-682Y	CARBON RESISTOR
	R206	QRD161J-101Y	CARBON RESISTOR
	R207	QRD161J-105Y	CARBON RESISTOR
	R208	QRD161J-222Y	CARBON RESISTOR
	R209	QRD161J-222Y	CARBON RESISTOR
	R218	QRD161J-104Y	CARBON RESISTOR
	R219	QRD161J-104Y	CARBON RESISTOR
	R220	QRD161J-222Y	CARBON RESISTOR
	R221	QRD161J-472Y	CARBON RESISTOR
	R222	QRD161J-822Y	CARBON RESISTOR
	R223	QRD161J-102Y	CARBON RESISTOR
	R224	QRD161J-332Y	CARBON RESISTOR
	R225	QRD161J-102Y	CARBON RESISTOR
	R226	QRD161J-683Y	CARBON RESISTOR
	R227	QRD161J-101Y	CARBON RESISTOR
	R228	QRD161J-103Y	CARBON RESISTOR
	R232	QRD161J-103Y	CARBON RESISTOR
	R233	QRD161J-223Y	CARBON RESISTOR
	R234	QRD161J-562Y	CARBON RESISTOR
	R235	QRD161J-152Y	CARBON RESISTOR
	R237	QRD161J-820Y	CARBON RESISTOR
	R241	QRD161J-273Y	CARBON RESISTOR
	R242	QRD161J-332Y	CARBON RESISTOR
	R243	QRD161J-101Y	CARBON RESISTOR
	R244	QRD161J-183Y	CARBON RESISTOR
	R245	QRD161J-101Y	CARBON RESISTOR
	R246	QRD161J-103Y	CARBON RESISTOR
	R247	QRD161J-103Y	CARBON RESISTOR
	R248	QRD161J-105Y	CARBON RESISTOR
	R249	QRD161J-393Y	CARBON RESISTOR
	R251	QRD161J-332Y	CARBON RESISTOR
	R252	QRD161J-104Y	CARBON RESISTOR
	R253	QRD161J-103Y	CARBON RESISTOR
	R254	QRD161J-151Y	CARBON RESISTOR
	R255	QRD161J-184Y	CARBON RESISTOR
	R256	QRD161J-103Y	CARBON RESISTOR
	R257	QRD161J-103Y	CARBON RESISTOR
	R258	QRD161J-473Y	CARBON RESISTOR
	R260	QRD161J-103Y	CARBON RESISTOR
	R261	QRD161J-332Y	CARBON RESISTOR
	R263	QRD161J-153Y	CARBON RESISTOR
	R265	QRD161J-222Y	CARBON RESISTOR
	R266	QRD161J-332Y	CARBON RESISTOR
	R267	QRD161J-222Y	CARBON RESISTOR
	R268	QRD161J-222Y	CARBON RESISTOR
	R269	QRD161J-472Y	CARBON RESISTOR
	R270	QRD161J-472Y	CARBON RESISTOR
	R271	QRD161J-472Y	CARBON RESISTOR
	R273	QRD161J-332Y	CARBON RESISTOR
	R274	QRD161J-470Y	CARBON RESISTOR
	R381	QRD161J-183Y	CARBON RESISTOR
	R382	QRD161J-333Y	CARBON RESISTOR
	R383	QRD161J-103Y	CARBON RESISTOR
	R481	QRD161J-183Y	CARBON RESISTOR
	R482	QRD161J-333Y	CARBON RESISTOR
	R483	QRD161J-103Y	CARBON RESISTOR
	R501	QRD161J-103Y	CARBON RESISTOR
⚠	R506	QRD149J-4R7S	CARBON RESISTOR
	R507	QRD161J-102Y	CARBON RESISTOR
	R508	QRD161J-152Y	CARBON RESISTOR
	R509	QRD161J-103Y	CARBON RESISTOR
	R510	QRD161J-103Y	CARBON RESISTOR
	R513	QRD161J-103Y	CARBON RESISTOR
	R514	QRD161J-223Y	CARBON RESISTOR
	R515	QRD144J-103S	CARBON RESISTOR
	R518	QRD161J-221Y	CARBON RESISTOR
	R521	QRD161J-223Y	CARBON RESISTOR
	R522	QRD161J-473Y	CARBON RESISTOR
	R523	QRD161J-223Y	CARBON RESISTOR
	R527	QRD161J-103Y	CARBON RESISTOR
	R528	QRD161J-472Y	CARBON RESISTOR
	R529	QRD161J-472Y	CARBON RESISTOR
	R530	QRD161J-222Y	CARBON RESISTOR
	R531	QRD161J-103Y	CARBON RESISTOR
	R532	QRD161J-102Y	CARBON RESISTOR
	R533	QRD161J-104Y	CARBON RESISTOR
	R534	QRD161J-102Y	CARBON RESISTOR
	R535	QRD161J-102Y	CARBON RESISTOR
	R536	QRD161J-102Y	CARBON RESISTOR
	R537	QRD161J-391Y	CARBON RESISTOR
	R538	QRD161J-391Y	CARBON RESISTOR
⚠	R539	QRD161J-391Y	CARBON RESISTOR
⚠	R541	QRD161J-331Y	CARBON RESISTOE
	R559	QRD161J-221Y	CARBON RESISTOR
⚠	R562	QRD149J-4R7S	CARBON RESISTOR
⚠	R577	QRD149J-221S	CARBON RESISTOR
⚠	R578	QRD149J-4R7S	CARBON RESISTOR
	R579	QRD161J-471Y	CARBON RESISTOR
	R591	QRD161J-102Y	CARBON RESISTOR
	R592	QRD161J-102Y	CARBON RESISTOR
	R593	QRD161J-222Y	CARBON RESISTOR
	R594	QRD161J-272Y	CARBON RESISTOR
	R595	QRD161J-103Y	CARBON RESISTOR
	R596	QRD161J-103Y	CARBON RESISTOR
	R597	QRD161J-561Y	CARBON RESISTOR
⚠	R781	QRD161J-821Y	CARBON RESISTOR
	R782	QRD161J-821Y	CARBON RESISTOR
	R901	QRD161J-471Y	CARBON RESISTOR
	R902	QRD161J-332Y	CARBON RESISTOR
	R903	QRD161J-472Y	CARBON RESISTOR
	R904	QRD161J-103Y	CARBON RESISTOR
	R905	QRD161J-223Y	CARBON RESISTOR
	R906	QRD161J-221Y	CARBON RESISTOR
	R907	QRD161J-222Y	CARBON RESISTOR
	R908	QRD161J-332Y	CARBON RESISTOR
	R909	QRD161J-222Y	CARBON RESISTOR
	R911	QWY124-5.0Y	BUS WIRE
	R915	QRD161J-100Y	CARBON RESISTOR
	R916	QRD161J-100Y	CARBON RESISTOR
	R917	QRD161J-103Y	CARBON RESISTOR
	R918	QRD161J-103Y	CARBON RESISTOR
	R919	QRD161J-223Y	CARBON RESISTOR
	R920	QRD161J-472Y	CARBON RESISTOR
	R921	QRD161J-472Y	CARBON RESISTOR
⚠	R923	QRD149J-3R3S	CARBON RESISTOR
	R924	QRD161J-393Y	CARBON RESISTOR
	R925	QRD161J-393Y	CARBON RESISTOR
	R927	QRD161J-103Y	CARBON RESISTOR
	R928	QRD161J-332Y	CARBON RESISTOR
	R929	QRD161J-471Y	CARBON RESISTOR
	R930	QRD161J-471Y	CARBON RESISTOR
	R931	QRD161J-332Y	CARBON RESISTOR
	R932	QRD161J-152Y	CARBON RESISTOR
	R934	QRD161J-152Y	CARBON RESISTOR
	R946	QRD161J-101Y	CARBON RESISTOR
	R947	QRD161J-103	CARBON RESISTOR
	R948	QRD161J-472Y	CARBON RESISTOR
	R949	QRD161J-103Y	CARBON RESISTOR
	R950	QRD144J-223S	CARBON RESISTOR
	R951	QRD161J-101Y	CARBON RESISTOR
	R953	QRD161J-682Y	CARBON RESISTOR
	R954	QRD161J-102Y	CARBON RESISTOR
	R955	QRD161J-102Y	CARBON RESISTOR
	R956	QRD161J-102Y	CARBON RESISTOR
⚠	R957	QRD149J-100S	CARBON RESISTOR
	R958	QRD161J-102Y	CARBON RESISTOR
	R959	QRD161J-562Y	CARBON RESISTOR
	R960	QRD161J-153Y	CARBON RESISTOR
	R963	QRD161J-472Y	CARBON RESISTOR
	R964	QRD161J-103Y	CARBON RESISTOR
	R965	QRD161J-103Y	CARBON RESISTOR
	R966	QRD161J-223Y	CARBON RESISTOR
	R967	QRD161J-391Y	CARBON RESISTOR
	R968	QRD144J-103S	CARBON RESISTOR
	R969	QRD161J-102Y	CARBON RESISTOR
	R970	QRD161J-471Y	CARBON RESISTOR
	R971	QRD161J-471Y	CARBON RESISTOR
	R980	QRD161J-152Y	CARBON RESISTOR
	R981	QRD161J-123Y	CARBON RESISTOR
	R982	QRD161J-123Y	CARBON RESISTOR
	R983	QRD161J-152Y	CARBON RESISTOR
	R984	QRD161J-104Y	CARBON RESISTOR
	R986	QRD161J-273Y	CARBON RESISTOR
	R987	QRD161J-123Y	CARBON RESISTOR
	R988	QRD161J-273Y	CARBON RESISTOR
	S505	QSP1A11-V01	TACT SWITCH
	S506	QSP1A11-V01	TACT SWITCH
	S507	QSP1A11-V01	TACT SWITCH
	S508	QSP1A11-V01	TACT SWITCH
	S511	QSP1A11-V01	TACT SWITCH
	S512	QSP1A11-V01	TACT SWITCH
⚠	S520	QSP0219-061	PUSH SWITCH
	S902	QST7261-V01	PUSH SW
	VR101	QVPA601-502	V.RESISTOR
	VR103	QVP4A0B-104	V.RESISTOR
	VR104	QVPA601-203	POTENTIOMETER
	VR201	QVPA601-502	V.RESISTOR
	VR203	QVP4A0B-104	V.RESISTOR
	VR204	QVPA601-203	POTENTIOMETER
	VR901	QVD7A7A-015V	V.RESISTER
⚠	S1	QSS2325-208	SLIDE SWITCH
	C157	QETC1HM-224ZN	E.CAPACITOR (DIN AMP)
	C257	QETC1HM-224ZN	E.CAPACITOR (DIN AMP)

12 Exploded View of Mechanism Assembly

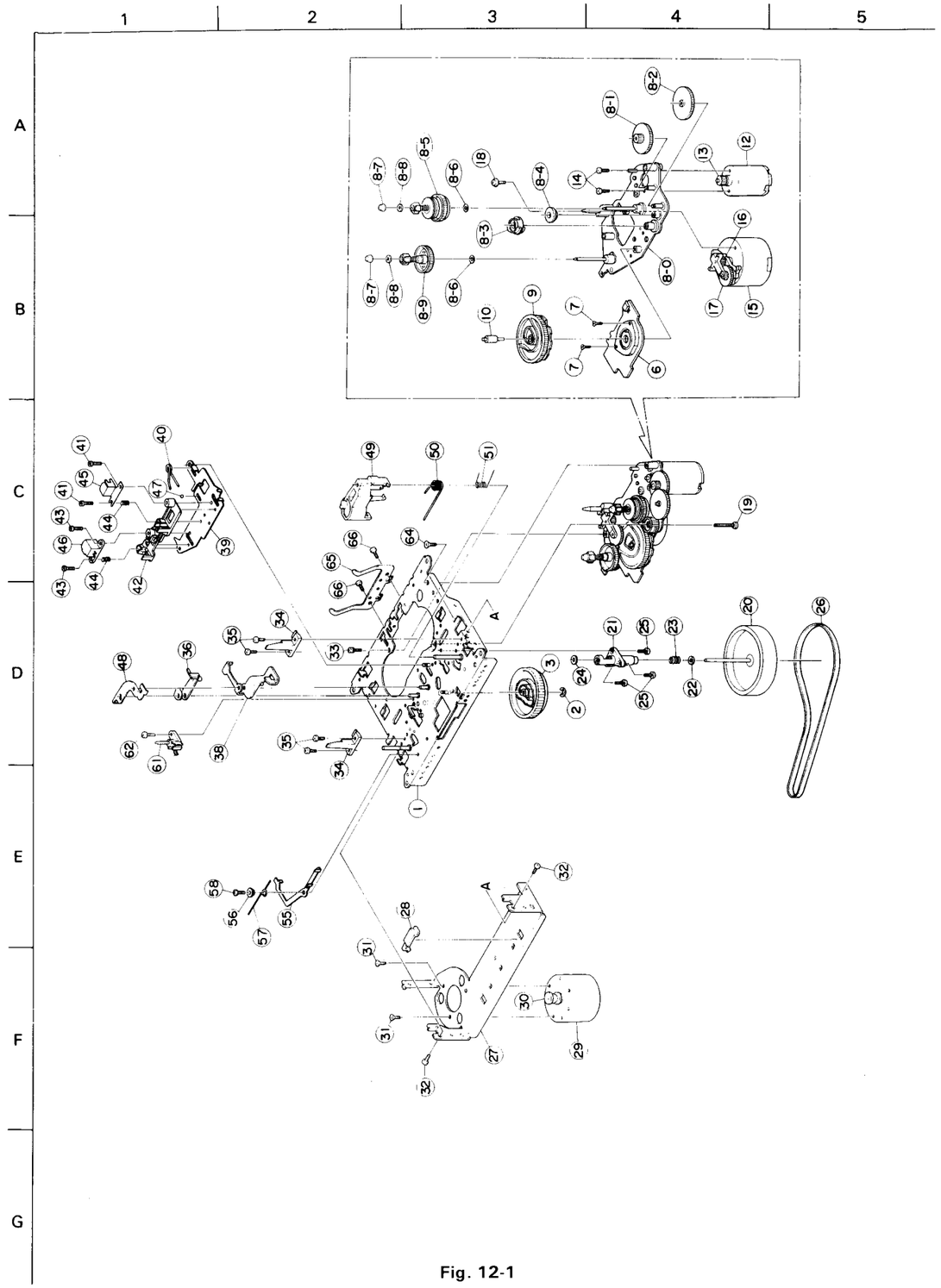


Fig. 12-1

Mechaanism Assembly Parts List

⚠ Parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY
	1	VKL2389-00A	CHASSIS BASE		1
	2	REE2000X	E.RING		1
	3	VKS2186-002	P.ROLLER CAM		1
	6	VKZ3152-00C	CAM SWITCH ASY.	CAM SWITCH ASS'Y	1
	7	SSST2006Z	TAP.SCREW		2
	8-0	VKL2375-00A	DISK BASE		1
	8-1	VKR4527-001	HELICAL GEAR		1
	8-2	VKR3001-002	GEAR(2)		1
	8-3	VKR3145-002	CAM GEAR		1
	8-4	VKR4516-001	GEAR		1
	8-5	VKR4517-00A	REEL DISK ASS'Y		1
	8-6	VKZ4003-010	FELT	BACK TENSION	2
	8-7	VKS4131-001	REEL STOPPER		2
	8-8	VKR4170-001	RING		2
	8-9	VKR4518-00A	REEL DISK ASS'Y		1
	9	VKS2188-002	HEAD BASE CAM		1
	10	VKH3004-068	FLANGE SHAFT(A)		1
⚠	12	MXN-13AB08A	D.C.MOTOR	CAM	1
	13	VKR4528-001	MOTOR GEAR	CAM MOTOR	1
	14	SPSP3005Z	SCREW	CAM MOTOR	2
⚠	15	MMN-6F4RA88	D.C.MOTOR	REEL	1
	16	VKR3000-003	GEAR(1)	REEL MOTOR	1
	17	VKS4503-00D	F/R.ARM ASS'Y		1
	18	SWSP2608Z	SCREW	REEL MOTOR	1
	19	SDSR2610Z	SCREW	D.BASE UNIT	1
	20	VKF3149-00B	FLYWHEEL ASS'Y		1
	21	VKF4122-00E	CAPSTAN METAL		1
	22	VKZ4035-010	WASHER	TAKE-UP	1
	23	VKW3001-241	SPRING THRUST		
	24	VKZ4035-009	WASHER		1
	25	SDST2605Z	SCREW		3
	26	VKB3001-037	BELT	CAPSTAN	1
	27	VKL3682-001	F.M.BRACKET		1
	28	VKS4437-001	THRUST PLATE		1
⚠	29	SHE2L52	D.C.MOTOR	CAPSTAN	1
	30	VKR4384-001	MOTOR PULLEY		1
	31	SSSP2604Z	SCREW	CAPSTAN MOTOR	2
	32	SDST2606Z	SCREW	F.M.BRACKET	2
	33	LPSP2614Z	SCREW	REEL MOTOR	1
	34	VKS4901-002	CASSETTE GUIDE		2
	35	SDST2606Z	SCREW	CASSETTE GUIDE	4
	36	VKL5316-00E	H.BASE ARM ASSY		1
	38	VKL3421-00B	P.R.LEVER ASS'Y		1
	39	VKL3685-003	H.BASE		1
	40	VKW4467-001	TORSION SPRING		1
	41	SPSX2011N	SCREW		2
	42	VKS2123-001	HEAD MOUNT BASE		1
	43	SPSX2012N	SCREW		2
	44	VKW3001-080	SPRING		2
	45	VGH0421-020	R / P HEAD	A-MECHA	1
	46	VGH0212-104	ERASER HEAD		1
	47	T41615-004	STEEL BALL		1
	48	VKY4425-002	SPRING PLATE		1

⚠ Parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY
	49	VKP4169-00D	P.R.ARM ASS'Y		1
	50	VKW3006-130	TORSION SPRING		1
	51	VKW3006-057	TORSION SPRING		1
	55	VKL5321-002	DOOR SAFETY		1
	56	VKH4418-001	FLANGE COLLAR		1
	57	VKW3006-061	TORSION SPRING		1
	58	SDST2605Z	SCREW		1
	61	VKS4512-002	GUIDE POST		1
	62	SDST2606Z	SCREW		1
	64	SSSF3010Z	SCREW	MECHA	1
	65	VKY4279-001	PACK SPRING		1
	66	SDST2604Z	SCREW	PACK SPRING	2

13 Exploded View of Enclosure Assembly

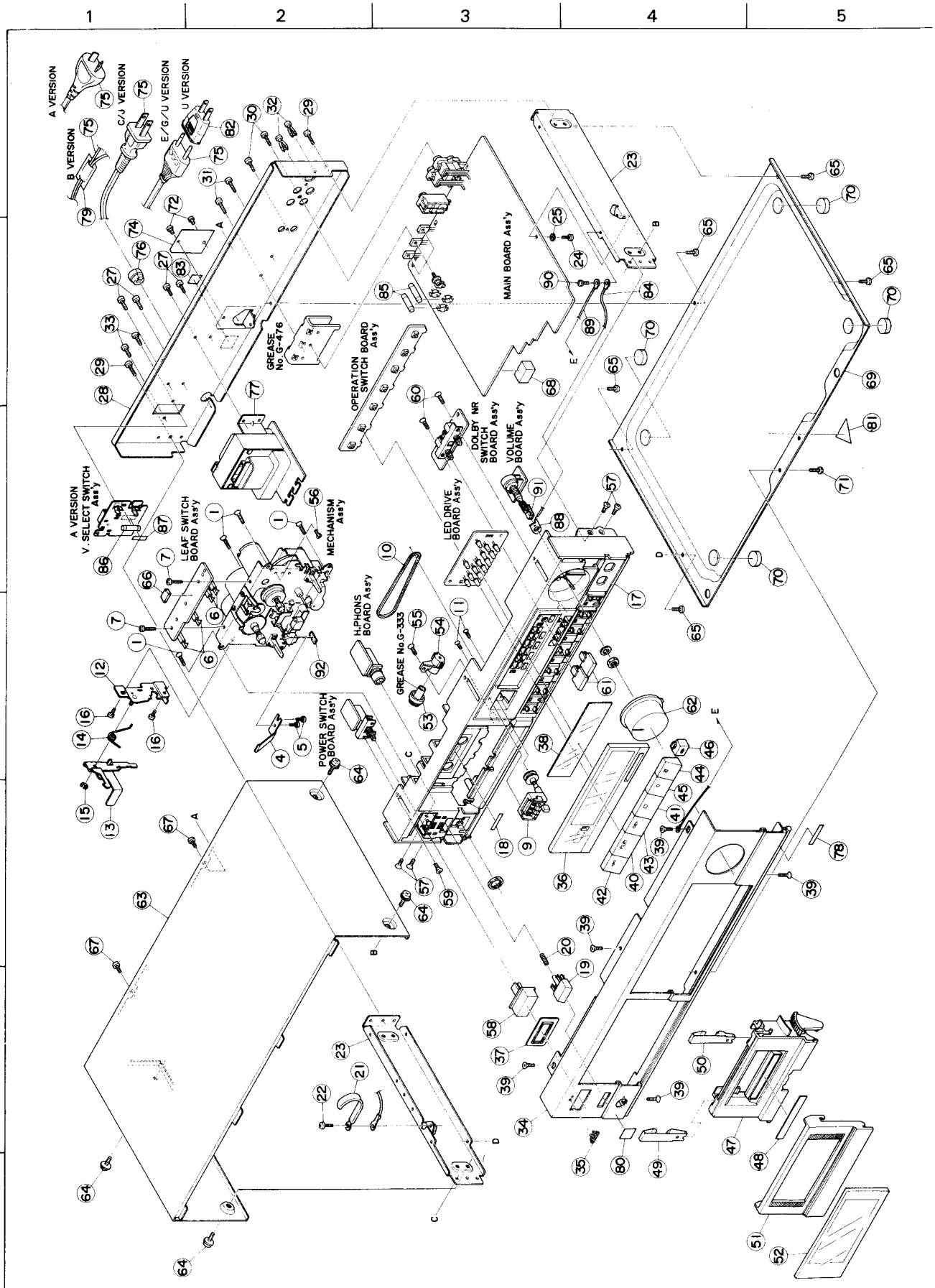


Fig. 13-1

Enclosure Assembly Parts List

⚠ Parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY
	1	SSSF3010Z	SCREW	MECHA+F.PANEL	4
	2	VKY4279-001	PACK SPRING		1
	3	SDST2604Z	SCREW		2
	4	VKY4497-001	HOLDER SPRING	MECHA	1
	5	SDST2603Z	SCREW	H.SPRING	2
	6	VSH1140-002	LEAF SWITCH	MECHA	4
	7	SDST2608Z	SCREW	LEAF SW PWB	2
	9	VKC5189-001T	TAPE COUNTER		1
	10	VKB3000-053	COUNTER BELT		1
	11	SSSF2606Z	SCREW	TAPE COUNTER	2
	12	VKL6066-00A	EJECT BKT ASS'Y		1
	13	VKM3124-001	EJECT LEVER		1
	14	VKW4643-001	TORSION SPRING		1
	15	REE2500	E.RING		1
	16	SDST2605Z	SCREW		2
	17	VJC1688-001	FRONT PANEL		1
	18	VJD4024-001	REFLECTION PLAT		1
	19	VXP4349-00A	PUSH BUTTON		1
	20	VKW3001-063	COMP.SPRING		1
	21	VKZ4001-011	WIRE HOLDER		1
	22	SDST3006Z	SCREW		1
	23	VKL3817-003	SIDE CHASSIS		2
	24	SDST3006Z	SCREW	P.W.B	1
	25	WBS3000N	WASHER		1
	27	SDST3006M	SCREW	P.TRANS	4
	28	VJC2266-006	REAR PANEL	TD-X311A/B/C/E/J(BK)	1
		VJC2266-007	REAR PANEL	TD-X311G(BK)	1
		VJC2266-008	REAR PANEL	TD-X311U(BK)	1
	29	SDST3006M	SCREW	R.PANEL+C.CHASSIS	2
	30	SDSF3008M	SCREW	P.JACK+DCS	2
	31	SDSF3008M	SCREW	HEAT SINK	2
	32	E48729-002	PLASTIC RIVET	TD-X311G(BK)DIN JACK	2
	33	SDSP3008M	SCREW	TD-X311U(BK)V.SELECT	2
	34	VJC1689-003	FRONT PLATE	TD-X311A/B/E/U(BK)	1
		VJC1689-004	FRONT PLATE	TD-X311C/J(BK)	1
	35	E72968-001	JVC MARK		1
	36	VJK3430-004	FINDER		1
	37	E73878-002	P.BUTTON ESCUTC		1
	38	VJD5119-002	LED PLATE		1
	39	SSSF3010Z	SCREW	F.PANEL+F.PLATE	5
	40	VXP3221-007	MECHA BUTTON	MECHA	1
	41	VXP3221-008	MECHA BUTTON	EJECT	1
	42	VXP3221-009	MECHA BUTTON		1
	43	VXP3221-010	MECHA BUTTON		1
	44	VXP3221-011	MECHA BUTTON		1
	45	VXP3221-012	MECHA BUTTON		1
	46	VXP4686-001	PUSH BUTTON		1
	47	VJT2177-001	CASSETTE HOLDER		1
	48	VJD5143-002	HOLDER PLATE		1
	49	VKY4382-007	CASSETTE SPRING		1
	50	VKY4382-008	CASSETTE SPRING		1
	51	VJT3242-002	CASSETTE LID		1
	52	VJT4149-001	CASSETTE FINDER		1
	34, 35, 37	ZCTDX311J-FBK	Front Plate Ass'y	J. ONLY	1
		ZCTDX311K-FBK	Front Plate Ass'y	Except J Version	1
	47~50	ZCTDX311K-CH	Cassette Holder Ass'y		1
	51, 52	ZCTDX311K-CLBK	Cassette Lid Ass'y		1

⚠ Parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY
	53	VYH4769-002	GEAR		1
	54	VYH5033-002	DAMPER HOLDER		1
	55	SBSF3010Z	TAPPING SCREW		1
	56	SSSF3010Z	SCREW		
	57	SSST3006Z	SCREW		4
	58	E73877-001	PUSH BUTTON	POWER	1
	59	SSSP3008Z	SCREW		1
	60	SSSF3010Z	SCREW		2
	61	E71268-002	PUSH KNOB	INPUT	2
	62	E304768-001	VOL. KNOB		1
	63	VJC2101-008	TOP COVER		1
	64	VKZ3001-004	SPECIAL SCREW		4
	65	SDST3006Z	SCREW		5
	66	VYSR103-022	SPACER		1
	67	SDST3006M	SCREW		2
	68	VYSH115-004	SPACER		1
	69	VJC1590-002	BOTTOM COVER		1
	70	VJF4003-002	FOOT		4
	71	SDSF3010Z	TAP.SCREW		1
	72	SDST3006M	SCREW		2
	74	VYN2217-002KA	NAME PLATE	TD-X311A/B(BK)	1
		VYN2217-004KK	NAME PLATE	TD-X311C(BK)	1
		VYN2217-005KA	NAME PLATE	TD-X311E(BK)	1
		VYN2217-006KA	NAME PLATE	TD-X311J(BK)	1
		VYN2217-007KA	NAME PLATE	TD-X311U(BK)	1
		VYN2217-008KA	NAME PLATE	TD-X311G(BK)	1
⚠	75	QMP1200-200	POWER CORD	TD-X311C/J(BK)	1
⚠		QMP2560-200	POWER CORD	TD-X311A(BK)	1
⚠		QMP3900-200	POWER CORD	TD-X311E/G(BK)	1
⚠		QMP7380-200	POWER CORD	TD-X311U(BK)	1
⚠		QMP9017-008BS	POWER CORD	TD-X311B(BK)	1
⚠	76	QHS3876-162	S.R.BUSHING	TD-X311A/C/E/J/U(BK)	1
⚠		QHS3876-162BS	S.R.BUSHING	TD-X311B(BK)	1
⚠	77	VTP54A3-051BN	POWER TRANS	TD-X311C/J(BK)	1
⚠		VTP54C3-061B	POWER TRANS	TD-X311A/E/G(BK)	1
⚠		VTP54C3-061BBS	POWER TRANS	TD-X311B(BK)	1
⚠		VTP54G3-041B	POWER TRANS	TD-X311U(BK)	1
	78	TJL000420-01	CAUTION LABEL	TD-X311B(BK)	1
	79	QZL1002-003	WARNING LABEL	TD-X311B(BK)	1
	80	VNC5004-001	MARK STICKER	TD-X311B/E/G(BK)	1
	81	VND4113-001	G.CAUTION CARD		1
	82	V04062-001	CONTI.PLUG	TD-X311U(BK)	1
	83	VND4037-002	F MARK	TD-X311G(BK)	1
	84	VWE350-10A2NT	WIRE WITH LUG		1
⚠	85	QMF51A2-R80	FUSE	F1,F2 TD-X311A/E/G/U	2
⚠		QMF51E2-R80BS	FUSE	F1,F2 TD-X311B	2
⚠	86	QMF51A2-R125	FUSE	F3 TD-X311U(BK)	1
	87	VND4003-046	FUSE LABEL	TD-X311U(BK)	1
	88	TAZ336499-02	VOLUME LUG		1
	89	VWE350-08NTNT	LUG WIRE		1
	90	SDST3006Z	SCREW		1
	91	VYSA1R2-008	SPACER		1
	92	VYSR103-028	SPACER		1

14 Packing

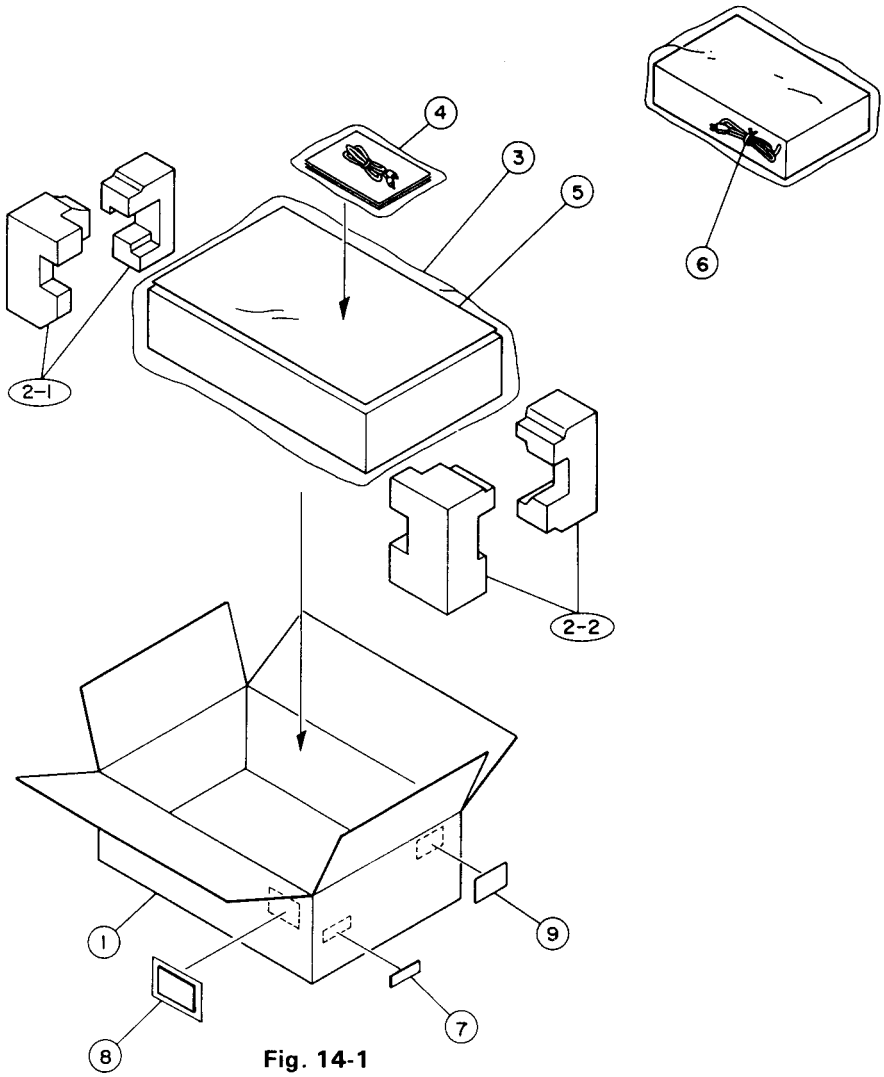


Fig. 14-1

Packing Parts List

⚠ Parts are safety assurance parts
When replacing those parts, make sure to use the specified one.

⚠	Ref.No.	Parts No.	Parts Name	Remarks	Q'ty
	1	VPC2217-002A	Carton		1
	2-1	VPH3125-002	Cushion	Left Side	1
	2-2	VPH3126-002	Cushion	Right Side	1
	3	VPE3005-025	Poly Bag	for Set	1
	4	VPE3005-007	Envelope	for Instruction Book	1
	5	VPK4002-006	Sheet	for Set	1
	6	Q04141H	Wire Clamp		1
	7	VND4909-001	Voltage Label	TD-X311U	1
	8	E66416-003	Envelope	TD-X311J/U for Warranty Card	1
	9	VND3044-004	Serial Label	TD-X311B	1
		VND3044-001	Serial Label	TD-X311A/U	1
		VND3044-001	Serial Label	TD-X311C	2
		VND3044-003	Serial Label	TD-X311E	1
		VND3044-002	Serial Label	TD-X311J	2
		VND3044-005	Serial Label	TD-X311G	1

15 Accessories

⚠ Parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

⚠	Parts No.	Parts Name	Remarks	Q'ty
	VPM0039-00D	Pin Cord		1
	EWP805-001E	Remote Cable		1
	VNN2217-661	Instruction Book		1
	BT20025J	Warranty Card	TD-X311C	1
	BT20029C	Warranty Card	TD-X311A	1
	BT20047C	Warranty Card	TD-X311J/U	1
	BT20060	Guarranty Card	TD-X311B	1
	BT20064A	Warranty Card	TD-X311G	1
	BT20066	Warranty Card	TD-X311B/G	1
	BT20098	Warranty Card	TD-X311A	1
	BT20071A	Service Network	TD-X311C	1
	BT20044E	Safety Instruction	TD-X311J	1
	VNC5311-203	Caution Card	TD-X311U	1
	VNC5311-204	Caution Card	TD-X311U	1
	VNC2200-019	Copylight Law Warning	TD-X311A/B/C/E/U	1
	BT20046C	Special Reply Card	TD-X311J/U	1

JVC
VICTOR COMPANY OF JAPAN, LIMITED.
AUDIO PRODUCTS DIVISION MAEBASHI PLANT 10-1, 1-chome, Ohwatari-cho, Maebashi-city 371, Japan

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